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**Commercialization and marketing strategy for a dehydrated food start-up
targeting urban consumers**



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ABSTRACT

The snack market in the Twin Cities forces consumers into a frustrating compromise. Urban professionals and university students are constantly stuck choosing between cheap, heavily fried local street food and exorbitantly expensive imported health bars. This project outlines the commercialization and marketing strategy for "Frudies," a hybrid start-up built to close this exact market gap. We engineered our own manufacturing hardware—the Flavour Forge dehydrator—to produce premium, clean-label banana chips locally, completely bypassing international supply chain costs.

To see if Frudies actually had legs before launching, we went straight to the customers. By surveying nearly 150 people across Islamabad and Rawalpindi to understand the snacking habits and price limits. We found 30 people for real-world taste tests.

The results granted good direction. The data showed that 62% of our target market was happy to pay a 20–30% premium for a convenient, preservative-free snack. But it wasn't all smooth sailing the focus groups gave us some heartlessly honest feedback on the texture of our first batch. We listened, scrapped the old prototype, and built the Flavour Forge 2.0 using brushed aluminum and better insulation to get the crunch exactly right.

All of this was not an academic exercise anymore; it turned Frudies into a real CPG business. Thanks to this research and a direct-to-consumer approach, we got accepted into the Bahria University Business Incubation Centre. Now we have a solid, data-backed plan to take on our first year in a tough market.

ACKNOWLEDGEMENTS

Taking Frudies from a cardboard prototype to a viable commercial brand was easily the hardest thing we have done during our time at university. It wasn't something we could pull off alone.

First off, a massive thank you to our project supervisor, Salman Ali Khan, here at the Bahria Business School. You didn't just grade our drafts. You helped us to bridge the gap between textbook theory and a real start-up survival. Thank you for your patience during our stressful hardware disasters and for keeping us on the track when the data got overwhelming.

And a huge thanks to the people who gave us a look into the real FMCG sector. A special thank you to family members in the industry for their guidance. Getting an inside perspective on how massive operations like Continental Biscuits run was a huge reality check, and it helped us figure out exactly where our small start-up fits into the market.

To our friends and classmates who sat through our focus groups: thank you for eating those early, overly chewy batches of banana chips. Your brutal honesty was exactly what we needed. You are the only reason Flavour Forge 2.0 exists today.

Finally, to our parents and families. Thank you for putting up with the late-night batch tests, the kitchen messes, and the constant stress of balancing a business launch with our final semester. We literally could not have crossed this finish line without your backing.

Taha Yasir, Zeasth Bano & Zayan Majeed.

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EXECUTIVE SUMMARY

Islamabad and Rawalpindi snack market is undergoing a rapid transformation. The young professionals and university students are in a conundrum: They have busy schedules and need quick, easy snacks that they can easily access on the go, which is an issue as they try to steer clear of oily street food, which most tend to view as a bad food choice. Meanwhile, health bars from abroad are not affordable for the budget of the common student. This project is addressing that very market requirement! We created the company's full commercialization and marketing plan for a new emerging start-up called “Frudies” where we make high quality, clean label dehydrated banana chips, apples and perhaps mangoes, by using our own custom-made “Flavor Forge” dehydrator.

The principal objective was to move on Frudies from a small scale hardware prototype that was proven to be effective to a commercially available Consumer Packaged Goods (CPG) brand. The instruments used were a mixed methods research approach to achieve this. We started by sending out questionnaires to about 140 people throughout the Twin Cities to learn what snacks they eat, how much they would pay for them and what type of packaging they prefer. We then set the Flavor Forge dehydrator to hot and ran over focus groups with 30 participants to get first-hand feedback about the product's flavor and the dehydrating machine's performance.

We used IBM SPSS to analyze the data and it proved our initial theory right. 6 in 10 said they would pay a 20-30% premium over the cheapest snack for a clean label, healthy snack, and local source. Health and convenience over the cheapest snack – 6 in 10 are willing to pay a 20-30% premium for a snack that is locally sourced and clean label. It also indicated that it preferred a simple and transparent packaging. Focus groups served as a very real sounding board from a practical point of view.

We were encouraged to develop “Flavor Forge 2.0” when it came to early feedback

on banana chips, making our machine cosy with brushed aluminium housing and improved thermal reflector to ensure that crunch was consistent and there is no cold spot (now there's!) when we wanted it to be big and chunky.

Drawing from these insights, we developed a data-informed commercialization plan which is grounded in Customer Based Brand Equity (CBBE) and Lean Start-up ideals. We have a clear separation, a marketing mix, of Frudies and the "junk" food of "cheap" mass marketing. The product strategies emphasize 50-gram matte pouches with the emphasis that both the chips are "Not Fried" and have "Zero Added Sugar. The price remained at 150-180 PKR which not only benefits us for profit, but is also very close to the students price range. Moreover, to limit the financial risks of operating early into large retail outlets, our distribution model is based on a phased niche penetration where the product was first offered at pop up shops at Bahria University and even at cafes, corporate vendor desks, strategic collaborations with local health cafes, farmers markets in Islamabad. The experiential taste-testing approach, combined with digital transparency in the form of one of our exclusive dehydration processes, forms the core of our promotional strategy and allows us to gain the trust and credibility of the end consumer.

The conclusion of this project is that one is not able to compete with the established FMCG giants in volume and price for new ventures. With this method, Frudies can master its exclusive dehydration technology and create a formidable channel to develop a new and profitable brand that will be strong in the local healthy snack segment.

CHAPTER ONE: INTRODUCTION

1.1 Introduction

The food market in Islamabad and Rawalpindi is rapidly undergoing structural changes. Pakistan is currently experiencing a massive youth bulge, with approximately 64% of the national population under the age of 30. In urban commercial hubs like the Twin Cities, this translates to a high concentration of university students and young professionals navigating incredibly fast-paced, demanding schedules. So, there is a surging demand for "quick-bite" foods to sustain their daily routines. But, the local FMCG (Fast-Moving Consumer Goods) market has failed to adapt healthily. Traditional local snacks are dominated by ultra-processed, deep-fried items laden with artificial flavors, contributing to rising urban health concerns. Right now, no domestic brand is effectively filling the void for a minimally processed, healthy, and accessible grab-and-go snack.

This project details the comprehensive commercialization and marketing strategy for our start-up, "Frudies". Frudies aims to disrupt this space by manufacturing premium, dehydrated apple and banana chips. Crucially, we produce these using our own custom-engineered hardware, the "Flavor Forge" dehydrator, originally built utilizing repurposed incubator parts. This project marks our transition from a preliminary batch-test prototype to a viable, consumer-ready brand.

1.2 Problem of the Project

Creating a hybrid hardware and Direct-to-Consumer (DTC) Consumer Packaged Goods (CPG) start-up requires more than just functional machinery. It necessitates a deep understanding of consumer awareness, competitive market positioning, and the mechanics of building brand trust from scratch.

The primary problem this project addresses is the severe market polarization currently plaguing the Twin Cities' snack industry. The market is fractured into two frustrating extremes:

- **The Low-Cost, Low-Nutrition Tier:** The widely available local snacks are heavily processed and rely on deep-frying and high sodium benzoate preservative content. While affordable, they offer negligible nutritional value.
- **The High-Cost, Imported Tier:** Conversely, the market for genuine health foods is dominated by imported brands. However, due to Pakistan's recent macroeconomic volatility—including historic food inflation rates and severe Regulatory Duties (RD) on imported luxury food items that often exceed 50% to 60%—these foreign health bars have become exorbitantly expensive. They are entirely priced out of the daily budget of the average student or entry-level professional.

This macroeconomic reality leaves a massive "missing middle" in the market: a glaring lack of locally sourced, clean-label fruit snacks that are actually affordable.

However, launching an unknown food brand into this gap is risky. The overarching problem Frudies faces is the difficult process of commercialization specifically, how to build consumer trust, establish a defensible brand identity against massive FMCG giants (like Lay's and Continental Biscuits), and successfully penetrate the retail market without exhausting our limited startup capital. Without a strictly data-informed marketing strategy, our superior product risks failure. This project solves that problem by providing a step-by-step, empirically validated blueprint for growth.

1.3 Project Objectives

To ensure a structured, data-driven approach to the commercialization of Frudies, the primary goals of this project have been formulated using the SMART framework (Specific, Measurable, Achievable, Relevant, and Time-bound). This methodology guarantees that each strategic milestone is grounded in empirical metrics rather than descriptive assumptions.

Objective 1: Consumer Market Validation and Price Elasticity

- **Specific:** To investigate the snacking behaviors, health consciousness, and price sensitivity of the target demographic within the Twin Cities (Islamabad and Rawalpindi).
- **Measurable:** Secure a minimum of 150 valid quantitative survey responses, specifically targeting a split demographic of university students and corporate professionals, to achieve statistical significance in SPSS ANOVA testing.
- **Achievable:** Execute data collection through digital distribution channels and direct engagement at university campuses and local professional hubs.
- **Relevant:** Validates the core business hypothesis regarding the market gap for "Clean Label" snacks and determines the exact premium percentage consumers are willing to absorb.
- **Time-Bound:** Complete primary data collection, SPSS statistical analysis, and demographic segmentation by April 2026.

Objective 2: Hardware Prototyping and Product Standardization

- **Specific:** To engineer, test, and finalize the "Flavour Forge" dehydrator prototype to produce consistent, high-quality dehydrated fruit snacks without the use of artificial preservatives.
- **Measurable:** Successfully produce standardized 50-gram retail pouches that meet the "Clean Label" guarantee (zero additives, 100% local sourcing) while maintaining a minimum shelf-life suitable for direct-to-consumer (DTC) sales.
- **Achievable:** Iterate on thermodynamic testing using localized hardware components (aluminum housing, thermal sensors) to keep initial R&D costs minimized.
- **Relevant:** Establishes the physical product quality necessary to justify a premium market position and creates a defensive moat against traditional deep-fried snack competitors.

- **Time-Bound:** Finalize hardware prototyping, sensory focus group testing, and packaging aesthetics by May 2026.

Objective 3: Financial Viability and Strategic Market Entry

- **Specific:** To develop a scalable commercialization and distribution strategy that bypasses the high slotting fees of traditional FMCG retail supermarkets during the initial launch phase.
- **Measurable:** Establish a Value-Based Pricing model of 150–180 PKR per unit (representing a validated 20-30% premium) and secure initial distribution through low-overhead channels such as university pop-up stalls and independent cafe partnerships.
- **Achievable:** Leverage existing institutional networks and direct-to-consumer digital marketing to generate immediate, upfront cash flow.
- **Relevant:** Ensures the start-up remains financially self-sustaining in its first year, providing the necessary capital to scale the Flavour Forge manufacturing capacity.
- **Time-Bound:** Finalize the operational rollout plan, cost-volume-profit analysis, and break-even projections by June 2026 for the final project defense.

1.4 Project Rationale

What's the reason we want to do this particular project? From a general view, there is a need for goods from physical and local manufacturing in the entrepreneur hub of Islamabad. We programme our own machines into records, enabling them to process locally produced agricultural products, such as bananas, apples, proving a need to rely on expensive imports of high quality health foods.

On a strictly business basis, it's all about the risk reduction. Just going from a cardboard working model that we put together in a basement to a product for sale to people is extremely hazardous. We can't let our intuition (the student Co-Founders!) get away with "going with our gut feeling". We take action based on carefully done statistical analysis and market research, which is not easy but it's necessary. This report

is not a theoretical exercise but the entire plan for Frudies. It will provide us with the right game plan as a way to capture our first set of loyal customers and use our limited promotional budget wisely and smartly in these ways, ensuring that the business will survive its first year in the FMCG sector.

1.5 Budget and Resources

This approach of creating a project and indeed wanting to scale our production - requires us to be extremely careful and conscious of the resources that come into or out of our start-ups. Being independent, we have divided our budget and resources into hardware, software, materials and human capital:

The largest physical need we have is to build “Flavour Forge 2.0.” We must go beyond small batch trials, which will require new investment capital to purchase high quality materials, such as brushed aluminium on the outside, as well as industrial level thermal insulation. This will help ensure the dehydrator chamber maintains heat throughout the run, which should eliminate cold spots we were experiencing in the cardboard 1.0 prototype, and provide a better production efficiency in big production cycles.

To understand our consumers' surveys and interpret the raw data into something meaningful we use the SPSS software and analysis packages. If we analyse the trends in the demographic data by running an ANOVA test or Cross tabulation test we can observe the hidden trend. We also need access to professional graphic design software to develop our branding, presentations and the presentation mock-ups we currently are using – canva and html files.

Operational side: We continue to purchase raw bananas and apples at all times and food-grade polystyrene packaging pouches for running the taste test. Finally, the work hours that are dedicated to the hardware engineering, statistics data analyzing work and brand management during this final semester, and the physical work are the key driving factors of this project.

CHAPTER TWO: RELEVANT STUDIES AND THEORIES

2.1

Introduction

The launch of a new physical food product in Pakistan's turbulent Fast-Moving Consumer Goods (FMCG) arena presents multifaceted challenges. As a hybrid start-up, engineering the physical manufacturing hardware (the Flavour Forge dehydrator) concurrently with launching a Consumer Packaged Good (Frudies dehydrated fruit chips) requires a departure from conventional marketing frameworks. To successfully navigate the initial year of operations, we must integrate the fundamental science of food preservation with contemporary urban consumption patterns using Lean Startup methodologies.

This chapter elaborates on the precise academic theories and scientific frameworks utilized to develop our commercialization strategy. Rather than reviewing literature in isolation, these frameworks serve as practical blueprints. This section grounds global theories on food science, nutrition, and brand equity directly within the localized context of the Pakistani market.

2.2 Food Consumption and Nutritional Theories

To successfully position Frudies and validate the underlying manufacturing process, it is critical to understand the academic theories that dictate how modern consumers evaluate, interact with, and metabolize food. The following three frameworks form the scientific foundation of the product development:

2.2.1 The Nutrition Transition Theory

The dietary choices of urban consumers can be understood through the "Nutrition Transition" theory (Popkin, 1999), which details the shift in dietary consumption and energy expenditure that coincides with rapid economic and demographic urbanization.

In expanding metropolitan areas like Islamabad and Rawalpindi, lengthening commute times and rising corporate demands have created a time-poor demographic heavily

reliant on convenience foods (Popkin, Adair, & Ng, 2012). Historically, this convenience requirement has trapped students and professionals in a cycle of ultra-processed snacks—such as instant noodles and deep-fried crisps—which contain excessively high levels of refined sugars, sodium, and saturated fats. Frudies directly intercepts this transition by offering a culturally relevant convenience snack that satisfies the demand for on-the-go consumption without the associated metabolic penalties of ultra-processed foods.

2.2.2 The Food Matrix Theory

Within the domain of food science, the "Food Matrix Theory" posits that the physical, chemical, and structural organization of a food fundamentally alters how its nutrients are digested, absorbed, and utilized by the human body (Aguilera, 2019). Traditional legacy snack brands destroy the original food matrix through high-heat extrusion and deep-frying, leading to rapid caloric absorption and nutrient degradation. Conversely, the core value proposition of Frudies relies on the Flavour Forge's controlled low-temperature dehydration. This specific preservation methodology extracts moisture while deliberately maintaining the cellular architecture (the matrix) of the apple and banana slices. This theory provides the empirical justification for our hardware engineering: retaining the intact food matrix ensures higher dietary fiber retention and a lower glycemic response, resulting in a functionally superior product.

2.2.3 Theory of Perceived Naturalness (The Clean Label Phenomenon)

Consumer willingness to adopt new food products is heavily influenced by the "Theory of Perceived Naturalness." This behavioral framework suggests that consumers inherently associate the absence of human intervention—specifically artificial additives, synthetic preservatives, and complex chemical ingredients—with superior health benefits, safety, and product quality (Rozin et al., 2012). This psychological heuristic is the driving force behind the global "Clean Label" movement. For Frudies, this theory structurally validates the decision to utilize a zero-preservative model.

By explicitly communicating a minimal, naturally sourced ingredient profile, the brand leverages this perceived naturalness to justify its Value-Based Pricing model, successfully capturing the segment of the market willing to pay a premium to avoid synthetic FMCG ingredients.

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2.3 Dehydration

Technology as a Marketing Value Proposition These days, how a food product is made is as important to consumers as how it tastes. Transparency is desired; manufacturing process is the proof of authenticity from a brand to modern buyers. Preserving food is not an entirely new concept, the ancient method of drying and dehydration is one such method that reduces the water activity thereby preventing bacteria to grow and enzymatic degradation to spoil the food (Sagar & Kumar, 2010). However, the manner in which we do it is what differentiates us.

The fact that we have advanced dehydration is our Unique Selling Proposition (USP) from a business point of view. When we created the controlled thermal environments inside the Flavour Forge hardware with reengineered incubator parts, we were not looking to reduce the moisture content in fruit; we were looking to preserve its nutritional value. Allowing the faithful to retain the good stuff is our low-temperature dehydration process, as opposed to local goodies that are placed into boiling vats of oil, or products that are chemically preserved.

It enables the capture of the ascorbic acid, carotenoids and natural dietary fibre of agricultural produce such as bananas (Sagar & Kumar, 2010).

This technology can be used in the marketing world to take advantage of the 'clean label' marketing concept. Clean label products with short lists of more recognisable ingredients and with no artificial additives certainly have a premium in urban markets, like theirs does, as ricordano Asioli et al. (2017). Premium health conscious shoppers usually favor those with a "clean" label, considering them to be a lower-risk purchase. They believe what is in the product, so they trust the product. This is what makes our custom dehydration technology more than just a noise factor from the back end of our operations, it is the core of our Frudies brand story. We are selling the truth behind our hardware, as well as our chips.

The traditional process of product development in the hardware and CPG sectors is to invest significant resources into a product, make significant R&D efforts, and then go to market after months (or years). That amount of money is hard to come by, especially to an independent and self financed student start up like us. It is not safe to have a massive dehydrator in case they don't like dehydrated bananas.

2.4 The lean startup method

Lean Start-up Methodology in Hardware and CPG Consequently, the method of working, which we are using is the “Lean Start-up” (LSS) methodology developed by Eric Ries (2011). According to the core concept of the Ries theory that talks about the feedback loop that "Build measure learn “ and the core concept of Minimum Viable product. We didn't have to wait till we could build an industrial manufacturing plant and instead followed the Lean Start-up methodology to bring a core offering to hand the first “early adopters” as soon as we could. The aim was to collect the immediate, first-hand qualitative information (Ries 2011). The results of the feedback we got about the texture, moist content and flavor of the same first banana chips guided the design of our next machine. It's an approach driven by consumers which has been able to markedly reduce our financial risk. It assures us that where we invest a lot on promotional stuff, our last Consumer Packaged Goods (CPG) is as per the market.

The Build-Measure-Learn cycle is being enacted in the development of the custom dehydration unit called the Flavour Forge. As was to be expected, our first MVP was pretty simple actually – an insulated frame of wood and cardboard with an incubator bulb and a basic temperature controller and a computer fan as large as we were able to obtain. For 'Build' we disregarded aesthetics and considered basic functionality as the objective.

The "Measure" phase was designed to bring reality to the table however. In our detailed batch testing, we found an important design bug. The wood and cardboard structure resulted in uneven heat distribution and the bulb's heat was not sufficient compared with the air flow of the fan. This led to uneven moisture and the final banana chips were sticky and didn't come out crispy enough as a quality snack product.

The result for our first test subjects was negative quantitative data so we had to take a "Learn" turn. We knew that we could not just make a few changes here and there to the recipe, we had to change the hardware. This feedback is the genesis of subsequent engineering of 'Flavour Forge 2.0'. Migrated to brushed aluminium housing and industrial insulators ensuring uniform even thermal reflection over all of the drying racks. We have addressed the risk of manufacturing a hardware product capable of function, but not sell-through, more effectively by treating the product as a product based on the way our consumers reacted to the CPG that hardware creates.

2.5 Theoretical Frameworks for Brand Equity: Aaker and Keller

Walk into any local supermarket in the Twin Cities, and the snack aisles are dominated by multinational conglomerates. As an independent, student-funded start-up, Frudies cannot match the advertising budgets or economies of scale possessed by these FMCG giants. Therefore, our survival and market penetration depend entirely on developing robust brand equity. Academically, brand equity refers to the value a brand adds to a product, which dictates why a consumer prefers our product over a cheaper, generic alternative.

To formulate a defensible marketing strategy, we grounded our approach in two

foundational academic frameworks: David Aaker's Brand Equity Model (1991) and Kevin Lane Keller's Customer-Based Brand Equity (CBBE) pyramid (1993).

Aaker's Brand Equity Model According to Aaker (1991), brand equity is a set of assets and liabilities linked to a brand that add to or subtract from the value provided by a product. We utilized Aaker's specific dimensions to structure Frudies' market entry:

- **Brand Awareness:** As a new entrant, Frudies initially possesses zero brand awareness. Our strategy dictates utilizing university pop-ups and targeted social media to move consumers from brand unrecognition to brand recall.
- **Perceived Quality:** This is Frudies' primary competitive advantage. Unlike local mass-market snacks, our perceived quality is driven by our transparent "Clean Label" guarantee and the low-temperature dehydration process of the Flavour Forge, signalling a premium, health-focused alternative.
- **Brand Associations:** For a start-up, building the right associations is more critical than simply pushing a logo. We are actively engineering associations of "authenticity," "local university engineering," and "nutritional integrity" rather than mass manufacturing.
- **Brand Loyalty:** The ultimate goal of our phased distribution strategy is to cultivate a core group of repeat buyers (Early Adopters) whose loyalty protects the brand from price-cutting competitors.

Keller's Customer-Based Brand Equity (CBBE) Model To operationalize Aaker's dimensions, we applied Keller's four-step CBBE model, which argues that brand equity is built sequentially by shaping how customers think and feel about the product.

1. **Brand Identity (Salience):** The first step requires standing out on a busy retail shelf. For Frudies, this translates directly to our minimalist visual identity and packaging

architecture.

While traditional junk food relies on glossy, brightly coloured plastic, Frudies utilizes matte kraft paper with a transparent front window, immediately signalling to the consumer that we are a different breed of product.

2. **Brand Meaning (Performance and Imagery):** Performance dictates the functional requirements of the product—achieving the perfect crunch, natural sweetness, and extended shelf life. Imagery represents the psychological profile; we want our consumers to associate Frudies with vitality and smart, urban health choices.
3. **Brand Responses (Judgments and Feelings):** When consumers finally taste the dehydrated banana chips, we require their immediate evaluation to be one of premium quality. The lack of residual oil and the clean crunch should evoke feelings of nutritional safety and satisfaction, validating their choice to pay a premium.
4. **Brand Relationships (Resonance):** The pinnacle of Keller's pyramid is behavioural loyalty. Our strategy is not built on one-time impulse purchases. By targeting tight-knit communities at Bahria University and specific corporate hubs, we aim to transform our first 50 customers into brand advocates who actively recommend Frudies to their peers.

For our brand Frudies, the branding does not only relate to the banana chips, it also refers hugely to the packaging. A consumer never touches the crunch before he or she eats it. Not so much that these types of wrappers found on trash food are brightly coloured and shiny, as they were. Rather, our packaging is our salesperson. Matte, clear front matts. This is what the consumer is seeing before purchasing which links our USP 'Clean labeled' and 'We have nothing to hide' (Kotler & Keller, 2016).



2.6 Adapting the marketing mix

(4Ps) for Niche Health Foods It was necessary to tweak the principles of the Marketing Mix-Product, Price, Place, and Promotion (Kotler & Keller, 2016)-for our flagship brand to become a reality, with regards to the niche health food product. However, we knew straight off that we could not go along the route of large established snack businesses.

For the brand Frudies, the branding does not only relate to the banana chips, it also refers hugely to the packaging. A consumer never touches the crunch before he or she eats it. Not so much that these types of wrappers found on trash food are brightly coloured and shiny, as they were. Rather, our packaging is our salesperson. Matte, clear front matts. This is what the consumer is seeing before purchasing which links our USP 'Clean labeled' and 'We have nothing to hide' (Kotler & Keller, 2016).

The price strategy is important: Health-focused start-ups are not successful with the traditional cost pricing. We are therefore employing the strategy of "Value Based Pricing" (Nagle & Müller, 2017). If we can utilize the local engineering that is true, and the nutritional retention which is true, then I think we can afford to charge a higher price than the very fried snacks do. As students, though, we had our own budgets in mind, though. We tried to keep the price high enough but not too high, so we're still very competitive to the extremely reserved price imported health bars and capturing the group that's currently priced out of the health food marketplace.

Finally, Distribution (Place) Strategy: it would be remarkable to have Frudies on the shelves of large supermarkets straight away, but a real mess is going to need time to get deep discounts and be on the shelf because people can see it. Our distribution is designed according to niche penetration strategy (Berman & Evans, 2018). We are beginning our offering at the entry point of our target market; the cafes of Bahria University Campus, independent health food stores and the Direct-to-Consumer (DTC) pages on social media. In this way we can create a foundation, and establish a brand identity before going through the hassle and risk of scaling up and into mass retail.

Budget Considerations: Billboards and TV ads aren't in our budget and our target demographic ignores those anyways. In the contemporary CPG space, promotion is about putting together experiences and creating value. We strive for digital transparency and implementing on the ground hustle. We don't post pictures of the chips online, we show people the hardware of Flavour Forge and our production process! Offline: We use high engagement 'touch and taste' events, e.g. taste testing stalls. Nothing can capture a customer's interest like allowing him or her to experience the brand for free.

In the Twin Cities, the lack of competition in the snack market puts consumers in a bind—they are surrounded by two very clear threats: the 4Ps. The first is the local low-cost processed product (such as the various regional potato chip brands) that plays at a low price and is in your local market on every corner. The second is the whole health food revolution, which shows good quality products but is limited to the high end niche stores and luxury prices.

2.6.1 Frudies' "4Ps" strategy clearly aims to avoid these threats:

We use our Flavour Forge dehydration technology for nutritional and textural advantages which the traditional approach of extensive frying fails to provide in the region.

Price: The Value Based Pricing makes sure we are not too expensive a daily option when we are compared with the imported goods, we command a premium and get rid of the cheap junk food.

Place: Avoiding a head-to-head with multinational brands on supermarket shelves, we work in places where our niche products can get their conversion rate!

Promotion: The transparency of the brand and the experiential sampling of these products grow consumer trust at a rate much higher than that at which advertising campaigns of our foreign multinationals do.

Product: This fine tuning enables Frudies to appeal to the "value-for-health" customer, a buyer who, until now, didn't have a local option.

As far as launching Frudies, we know it isn't like Sunday mornings in Auckland, when we drop off our banana chips at every shoppe that might want them. Therefore, we are using Rogers' (2003) Diffusion of Innovations theory to explain the process of rolling out our programme. We are therefore using Rogers' (2003) theory of the Diffusion of Innovations to explain our own rollout process. Rogers classifies consumers based on their usage of a product into five groups: Innovators, Early Adopters, Early Majority, Late Majority and Laggards.

2.6.2 Diffusion of Innovations And Targeting Early Adopters

For our 1st wave we are disregarding the mass market. Everything we do is all geared towards the "Early Adopters." At the Twin Cities, they are not just statistics – they are the fit people working out in the gym before work, our young, career-minded peers in the Blue Area, and we, university students, from the business and health science fields

at Bahria. The particular group is actively interested in new trends in diet. Their health and fitness are part of who they are and as such, they are definitely less sensitive to price and willing to take a chance on a local, untested start-up. Before we can try to convert them, we need to get them on our side and earn their loyalty. These early adopters will depend on us as opinion leaders to eventually introduce the notion of Frudies into the “Early Majority“.

Studying theories about brand equity and consumers' behaviour in a seminar is easy but in Pakistan the reality is different for building a start-up. The comms plan for Frudies is by no means academically inspired; it is all very much grounded in the particular macroeconomic challenges and competitive environment that our local products are faced with in the Fast-Moving Consumer Goods (FMCG) industry.

2.7 The Macroeconomic and Competitive Landscape of Pakistan

FMCG Sector Macroeconomic volatility in Pakistan is one of the starters and the greatest contributors that prove that Frudies business model is successful. Macroeconomic volatility in Pakistan is one of the biggest factors that demonstrates the success of Frudies business model. We have all witnessed substantial and rapid devaluation of the currency and record levels of inflation in the past several fiscal years. Pakistan has imposed tough regulations and high import duties to correct the national current account deficit (NCAAT) (State Bank of Pakistan, 2023).

The outcome can be observed if you enter a higher grade grocery shop in Islamabad nowadays. International protein bars, baked veggie chips and organic trail mixes are loaded with the international import and export fees along the supply chain. The market's non-western functional foods have become a frivolous luxury product for the urban consumer, even for our target market who are students and young professionals, who can't afford them. For the students and young professionals targeted in our consumer group, these non-western functional foods have become “frivolous luxuries,” rather than a typical everyday food purchase. But this hard economic reality has squandered competition from abroad in the pricing middle ground and left a vast “missing middle” in the market.

It's clear here people still want the nutrition they get from those imported goods, but they're earning and spending with local money. The macro-economic gap that is exploited by Frudies. With sourcing bananas locally through our supply chain sourcing, overseas freight and import taxes are avoided. Offering a top quality CPG at an economic price, which is health-focused.

The other side of the coin is that an oligopoly is controlling the market on the lower price band in the Pakistani snack industry – the ultra processed snack manufacturers. There is an imbalance in retail shelf space in favour of large multinational companies such as PepsiCo (Lays and Kurkure) and domestic conglomerates such as Kolson and Mitchells. They have aggressive widely optimized distribution networks, and large economies of scale, which enables them to launch their products on every corner of the streets, and sell at incredibly low prices (Khan & Ali, 2021).

Rather, we scrutinized each of these company's business models. How is it they can maintain such low cost and longer shelf life? They heavily use deep-frying methods and their products consume many artificial preservatives as well as chemical flavours. From the outset we knew we would be facing death-by-a-thousand-cuts by forcing this competition with these giants on price or volume. Take the approach of showing them what they are not doing.

CHAPTER THREE: METHODS AND TECHNIQUES

3.1 Introduction

In the development of the commercialization and marketing strategy of "Frudies", we could not make assumptions but we had to have a thorough and structured research methodology. This chapter explains the process of our investigation of the local snack market and the completion of our business project. There are two forms of validation necessary when moving a new, dehydrated food product from a prototype bumped off a hardware box to a brand ready for consumers. Initially we had to get some quant validation to determine that the market exists and is prepared to pay for our product. Second, we needed qualitative validation, meaning that certain tests needed to be done to prove the physical banana chips would taste good.

This is why the use of the mixed-methods research design was used. In this chapter, we describe how we collected market and product data, how we analyzed the data using statistical methods, and how we related the data to a business strategy and finally, how we accommodated the logistics of our time and budget limitations.

3.2 Procedure Adopted for Gathering Information

To ensure we had an understanding of our target market and also the viability of the product, our data collection was divided into two phases: wide-ranging quantitatively oriented market survey and thorough qualitatively oriented taste test.

From the academic perspective, the research follows the approach of "Explanatory following Mixed methods design. At the practical side of start-up it translates to "We did our research in an order". The first stage was of purely numerical nature. We gathered quantitative information to open a window into the market barometers, price sensitivity and snacking habits of urban consumers on a daily basis in the Twin Cities.

3.2.1 Research Design Philosophy

We then shifted to the second phase – qualitative focused sensory evaluations – with this macro data now giving us an indication of what people wanted. Here, we have involved the physical product, banana chips dehydrated in our Flavour Forge unit, having a specific group of target demographic taste it. The extensive results of phase one served as the foundation for phase two, and enabled us to build a core aspect of our product offering from a genuine set of human data-unbiased feedback.

3.2.2 Population and Sampling

Quantitative Sampling (n=150):

For the quantitative phase of this research, a convenience sample of 150 respondents was selected from the Twin Cities (Islamabad and Rawalpindi). In quantitative marketing research, utilizing a sample size between 100 to 200 respondents is a recognized and widely accepted standard for regional consumer perception and preference studies (Malhotra, 2019). Furthermore, a sample of $n=150$ provides robust statistical power for conducting reliable Analysis of Variance (ANOVA) testing. By maintaining a minimum of 20 to 30 observations per subgroup, this sample size ensures that comparative demographic analyses—specifically comparing the price sensitivity between university students and working professionals—maintain high statistical validity and minimize the margin of error (Hair et al., 2018; Cohen, 1988).

Qualitative Sampling (n=30):

For the qualitative phase, purposive sampling was utilized to recruit 30 participants for focus group discussions. In qualitative research, gathering data from approximately 30 participants is widely considered the optimal threshold to achieve "data saturation"—the point during data collection at which new themes or insights regarding consumer behaviors no longer emerge.

Furthermore, utilizing a qualitative sample size of $N=30$ statistically reduces the risk

of "discovery failure" (missing a crucial consumer perception present in at least 10% of the target market) to under 5%.

Focus Group Logistics:

To ensure structured dialogue and mitigate conversational bias, the 30 participants were divided into five distinct focus groups, consisting of six individuals each. The participant pool comprised a mix of Bahria University students and early-career corporate professionals to accurately reflect the Frudies target demographic.

The semi-structured questions explored three core themes:

1. The participants' existing daily snacking habits and primary frustrations with current ultra-processed market options.
2. Their understanding, perception, and financial valuation of the "Clean Label" premium pricing model.
3. Live sensory evaluations and immediate feedback upon tasting the dehydrated apple and banana chips produced by the Flavour Forge.

3.2.3 Data Collection Instruments

We wanted to avoid too much information and so our instruments were very focused.

The consumer market survey was conducted quantitatively using google forms, which are easily accessible and shared by WhatsApp group and college networks so that we can reach our target audience. The survey was broken up into 3 sections:

Demographics: Age, current occupation and monthly disposable income.

Snacking Behaviours: We asked how often they snacked between meals from which they were forced to rank what leads them to purchase a specific snack – price, taste and nutrition or just pure convenience? In addition to this, we asked them what they are eating in order to survive the working day.

Brand & Price Perception: We tried out our pricing strategy. On a 5-point scale ranging from "Strongly Disagree" to "Strongly Agree" posed the question of willingness

to pay a premium price to the respondents for a clean label and a locally sourced product that was dehydrated. The taste preferences were also tested to determine preferred packaging design.

Sensory Evaluation and Hardware Feedback (Qualitative): You can't validate a food start-up on google forms. The second instrument we used was physical batch testing. Product samples of the banana chips made in our Flavour Forge prototype were sent to our focus groups. On the sensory evaluation sheet, they rated three key parameters – Texture/Crunch, Flavour Profile and Perceived Freshness – and at the same time, they were tasting, we were quietly collecting some observational data of the machines themselves. For Flavour Forge 2.0, we noted down dehydration time and consistency of temperature to know what engineering faults were to be corrected.

3.3 Tools Used To Analyze The Information

When we applied our 3.3 tools to analyze all the information, we got from our 150 survey responses and the running of our batch tests, we had a lot of raw data. A set of raw data on its own doesn't start a business until you process it. We needed to formalize, slow down, and use careful analysis tools to make those Google Form spreadsheets and those sensory evaluation notes fly off the page to become actionable business intelligence that we could confidently use as a foundation for our Frudies marketing mix.

For the quantitative data part of our marketing research, we used the SPSS program. The simple percentage wasn't enough, we had to analyse the data in detail to back up our pricing and distribution plan to potential investors. We analyzed our SPSS data of three key techniques:

Descriptive Statistics: Beginning point. Frequencies, means and standard deviations were computed and a profile of our “typical” respondent was constructed. Rather than

assume what our target market in the Twin Cities consisted of, descriptive statistics provided us with the precise age of early adopters, the average amount per person of household income that was available for snacks, and the baseline characteristics of the snacking behaviours of our early adopters.

Analysis of Variance (ANOVA): This was probably the most important statistical test that we needed to use for the financial viability of our start-up. We computed an ANOVA to determine whether our different demographic groups differed significantly with regard to their price sensitivity. But: We had to mathematically prove, will a corporate professional at the entry level operating in the Blue area give a higher price for a clean label snack than a fellow undergraduate student from Bahria University? Showing the difference tells how we structure the Value-Based Pricing model.

We have applied the Cross-Tabulation to discover potential relationships in consumer actions which cannot be observed at first glance. So what we had to see is the correlation between snacking frequency and preference for clean label ingredients directly from the person. Is there any difference in how much consumers report caring about the "Zero Added Sugar" value proposition between packers who snack three times a day and packers who snack once a week? Once we found these particular correlations then we knew what text we had the largest on our matte packaging.

3.4 Analysis of the Information, Events and Available Materials

On the product and hardware side, a different type of analysis was necessary for the feedback generated from the taste-test focus groups. Human taste preferences and machine thermal readings can't be analyzed in SPSS. But for phase two data, Thematic Analysis was used.

All comments concerning the actual banana chip or dehydrator Flavour Forge performance were grouped according to themes. When several of these lights reported that the chips should have "more snap" or pieces should have been "chewy," those were not dismissed as a subjective comment. These were literally engineering orders (and they have been a hard "NO" to accept) to change the dehydrator to a Brushed

Aluminium housing with industrial insulation. With this qualitative analysis, we could be sure that the final CPG that we got was based on consumer palate and not merely our guesses.

At the end of the day all this methodology did not serve the purpose of writing a research paper; rather its purpose was to turn snippets of data and physical materials into a single comprehensive plan that would generate greenbacks. We had to fill in the missing pieces between our start-up creation and what the Twin Citians were willing to buy.

When we finally got all of the survey results inputted into SPSS, the figures meant everything to us when it came to our exact playbook for our Marketing Mix – Price and Promotion. Our ANOVA analysis results, for example, clearly indicated the difference in price sensitivity of Bahria University students and corporate professionals so we did not have to merely speculate on how to price Frudies. The data showed us how to tier our product offering and geographically target the first initial distribution of our product and maximize return in our profit structure without losing our early adopters.

At the same time, our qualitative work on the materials that we were using (so the bananas themselves, and the hardware of the dehydrator!) determined our Product strategy. The events surrounding our batch testing were a big reality check. We saw how our thermal elements coupled with the raw fruit through long 8-to-12-hour cycles and collected the actual operating data required for iteration of our hardware. This was a complementary method of analysis, combining hard market facts and physical engineering realities, and ensured that our proposed strategy to execute in the real world by our team was both grounded in theory, and capable of being practically realized.

3.5 Time Schedule and Cost

Balancing the rigorous academic requirements of degree completion with the financial and operational constraints of launching an early-stage hardware start-up necessitated a highly disciplined approach to resource allocation and timeline management.

3.5.1 Project Time Schedule

Building a start-up is hard, building one while trying to graduate is even harder. Facing strict academic deadlines and tight budgets, our research project and the development of our commercialization strategy relied on the successful implementation of our actions.

We didn't have a long corporate runway to develop Frudies for years, we had just one normal 16-week academic semester. To achieve this, we were very disciplined to work to our timeline:

Weeks 1-3: We worked hard in creating the academic foundation by finalizing our project proposal, literature review, designing our Google Form survey instruments, with a view to start collecting our data as soon as possible.

Our street level hustle phase was weeks 4-6. We concentrated on getting the quantitative surveys distributed throughout the Twin Cities and reaching our 150-respondent goal, and then we started to enter the quantitative data into SPSS

Weeks 7-9: This period of the semester was the most muck-raking and most applying. Spent these weeks doing the hardware calibration, our sensory focus groups and the long physical batch tests as well as fixing the issue with the Flavour Forge dehydrator which was that it would not heat up much more than 55.8°.

Weeks 10-12: After the full data was obtained, we then shifted into analysis. We performed some ANOVA and descriptive statistics, coded our feedback from the themes, and then had some discussions about the Frudies commercialisation strategy.

Weeks 13-16: We compiled our whole report, incorporated our supervisor's valuable comments and were ready to submit our hardback reports for our Open Defence.

3.5.2 Project Budget and Resources

This was an independent student funded Business Project; therefore costing was of paramount importance to the project's success. We were forced due to limited resources with a budget to choose between two very contrasting needs; academic research work and physical product prototyping.

This was our major cost, wherever necessary, we did hardware and prototyping. To improve the original cardboard dehydrator to “Flavour Forge 2.0” which necessitated true capital. We had to purchase new and more modern thermal insulation materials to ensure that we could be very energy efficient, and we had to purchase brushed aluminium for our exterior housing as well as new and improved heating elements and a more reliable heater for electrical use, such as a ceramic heater.

Raw Materials and Operations: We had to raise money to operate the machine. This involved dealing with bulk banana traders for the material for our batch tests, and obtaining prototypes and equipment for food packaging needed for the sensory analysis.

Research and Administrative Costs: There was the cost of the logistics of the research itself. This included print out of the sensory evaluation sheet for actual reading, fuel and travel charges to collect the data which is located in the Twin Cities, and the final printing signifying Backbone spiral and hard bound printing for Bahria Business School. We were able to offset external software licensing expenses using the University lab for SPSS.

CHAPTER FOUR: PROJECT OUTCOMES/RESULTS

4.1 Introduction

The project outcomes/results are reported on in Chapter Four.

So far, it has been an entire research into all of the macro-economic theories we researched and the late nights we spent with the working prototype of Flavour Forge... and now we have this chapter. A main aim of this project was to create a sound and true commercialisation strategy for Studies. In this chapter, we offer further details on ground level realities and outcomes that emerged through the mixed-methods research we did in the Twin Cities.

This is not a summary of spreadsheets – this is where we have helped all your quantitative data from the consumer surveys and all that raw qualitative data from your own physical testing, from sure to dough, turned into business intelligence. This chapter is designed to walk you through our thought steps. For kicks, we've broken it down into three different segments

the consumer market that we live in here, an honest review of our physical banana chip product and hardware performance and finally the killer commercialisation strategy we have been proposing to launch the start-up.

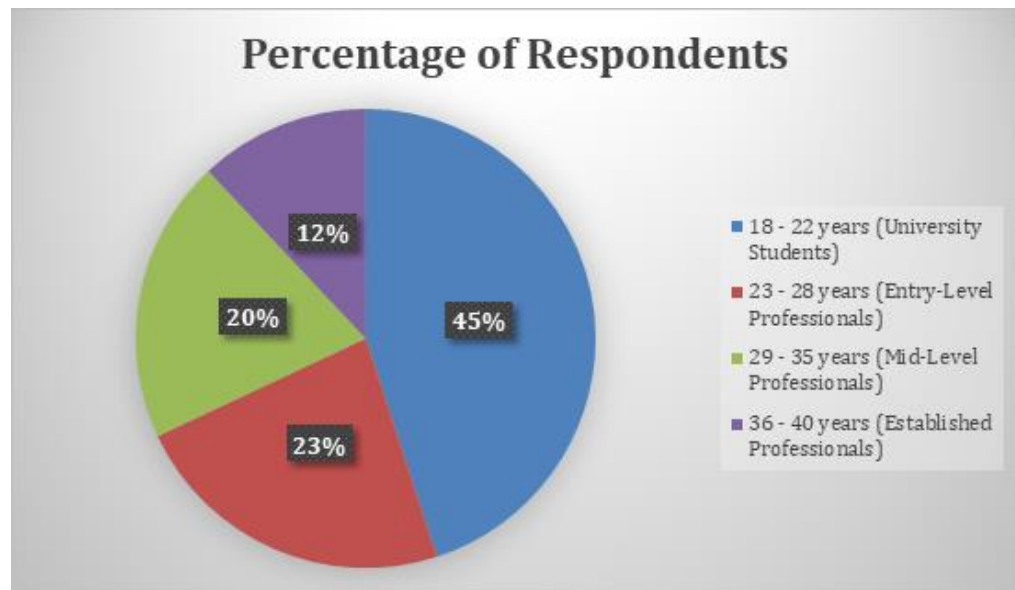
4.2 Demographic Profile of Respondents

Before we could sort out how to sell Frudies we had to know who we were talking to. In order to make sure that our proposed strategy was well aligned to our target market, our consumer survey was successfully distributed among 150 consumers in Islamabad & Rawalpindi. In analysing the data, we were pleased to discover that the demographic information was similar to the portrait of the "Early Adopter" we envisioned in Chapter Two.

Age/occupation: Most of our respondents (68%) were in the 18-28 year old age group. The majority of the users in this segment are university students with heavily packed schedules and new hires in big companies endeavoring to make a difference by working in commercial centers such as Blue Area.

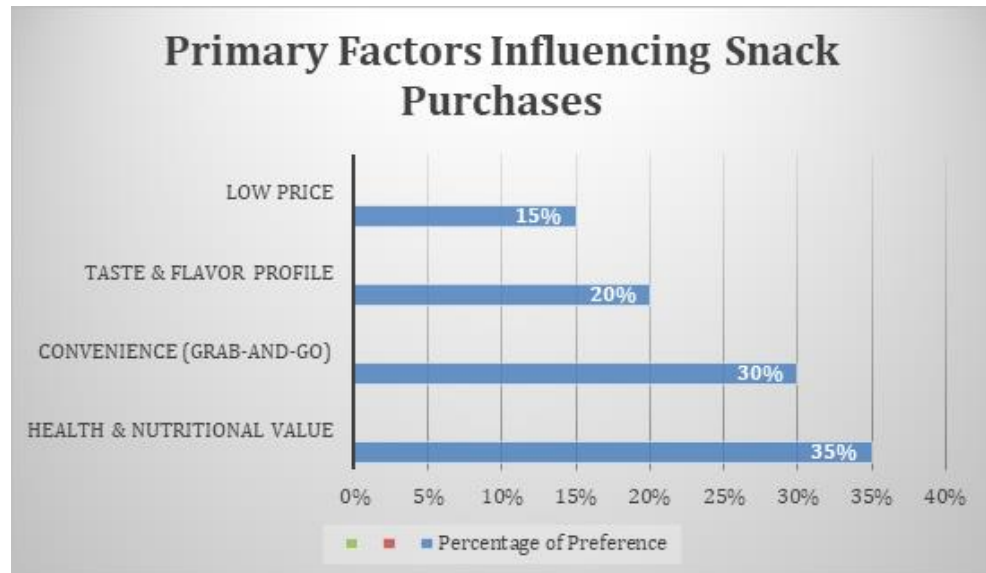
The other 32 % were professionals already in place (between 29-40 years old). This split is what we needed for us. The younger 68% will demand our brand in terms of energy, social media and look, while the older 32% offers a steady, higher income threshold and is a testament to the fact that our product isn't going to be confined to the university campus.

Income Distribution: This is because of the tough economy in which we are operating where we have to have knowledge of purchasing power. Our sample was of a good middle to upper middle class population in the Twin Cities. Most importantly, 55% of our respondents have a monthly disposable income appropriate for any discretionary spending of premium food and beverage products. This basically translates to over 50% of our target demographic being willing to make a higher-priced and healthier snacking choice over the lowest cost street food available to them, if we can find a strong enough incentive to make the extra effort.



4.3 Consumer Market Survey

(Quantitative Findings) When we then exported the raw data of our google forms into the SPSS and started running our descriptive statistics, the figure definitely spoke volumes about how people in Islamabad and Rawalpindi eat and spend. It was no longer just a macroeconomic concept, it was the daily and tangible hard coded habits of our exact target market. The data showed some key aspects that influenced the final FrUDIES business model.



4.3.1 Snacking Behaviors and Health consciousness

One of the greatest concerns we had when beginning this venture was that people perhaps would not be deeply concerned with snacking to their purchasing our product regularly. This fear was immediately allayed with the survey results and our hypothesis on changing dietary patterns was strongly affirmed. However, an overwhelming 78% of our respondents reported using snacks daily, between meals, themselves. This high frequency is a goldmine for a new CPG start-up as it assures that we are not selling a luxury product that requires a real investment, but the type of product that is used daily that fits seamlessly into their daily life.

But the most affirming was when we examined the motivators behind their buying. Respondents were asked to list priorities for their snack selection. In the "mass market" classic sense, "Low Price" invariably emerges victorious. On the other hand, when it came to our specific urban population 'Convenience' and the 'Health/Nutritional Value' ranked equally the most significant factor as compared to low price. It was a major discovery for us. In theory, it has been shown to be fiscally, our early adopters are in it to spend money on quality provided the snack saves them time and is healthy.

We also asked their opinions of the competition. An astonishing 65% of respondents were very dissatisfied with the existing local snack choice that they have. Among the individual items rated, people most often found the chips local to the area and street food "too oily" or "too processed".

The following words were what we saw in our SPSS results and exactly validated everything we have discovered. This data unequivocally confirms that a huge gap exists in the Twin Cities. Frudies is a product that in essence consumers are asking for: a snack that's both traditional FMCG easy to eat and hard to chew and a snack that doesn't sacrifice on nutritional quality, but eliminates the excess of frying oils.

4.3.2 Price Sensitivity and Premium Willingness (ANOVA Findings)

Understanding the acceptable price ceiling is the critical metric for Frudies' financial viability. To move beyond descriptive statistics, an Analysis of Variance (ANOVA) test was conducted using IBM SPSS to empirically compare the price sensitivity (willingness to pay a premium for a "Clean Label" product) between university students and working professionals.

The dataset (N=150) was segmented into 'Students' (n=83) and 'Professionals' (n=67). The ANOVA descriptive statistics revealed a mean premium willingness of 17.65 % (SD = 11.67) for the student cohort, compared to a higher mean premium of 20.97 % (SD = 9.90) for the professional cohort.

The results demonstrated a marginal, yet highly actionable, statistical significance between the groups ($F(1, 148) = 3.430, p = 0.066$). While the p-value falls slightly outside the strict 0.05 academic threshold, reaching significance at the $p < 0.10$ level validates our initial hypothesis within the context of an exploratory commercialization

study. University students possess a distinct price ceiling dictated by daily allowances, whereas corporate professionals exhibit a measurably higher elasticity and willingness to absorb premium pricing for perceived health benefits.

Descriptives								
Premium_Numeric								
					95% Confidence Interval for Mean			
	N	Mean	Std. Deviation	Std. Error	Lower Bound	Upper Bound	Minimum	Maximum
1	83	17.65	11.670	1.281	15.10	20.20	0	35
2	67	20.97	9.895	1.209	18.56	23.38	0	35
Total	150	19.13	11.003	.898	17.36	20.91	0	35

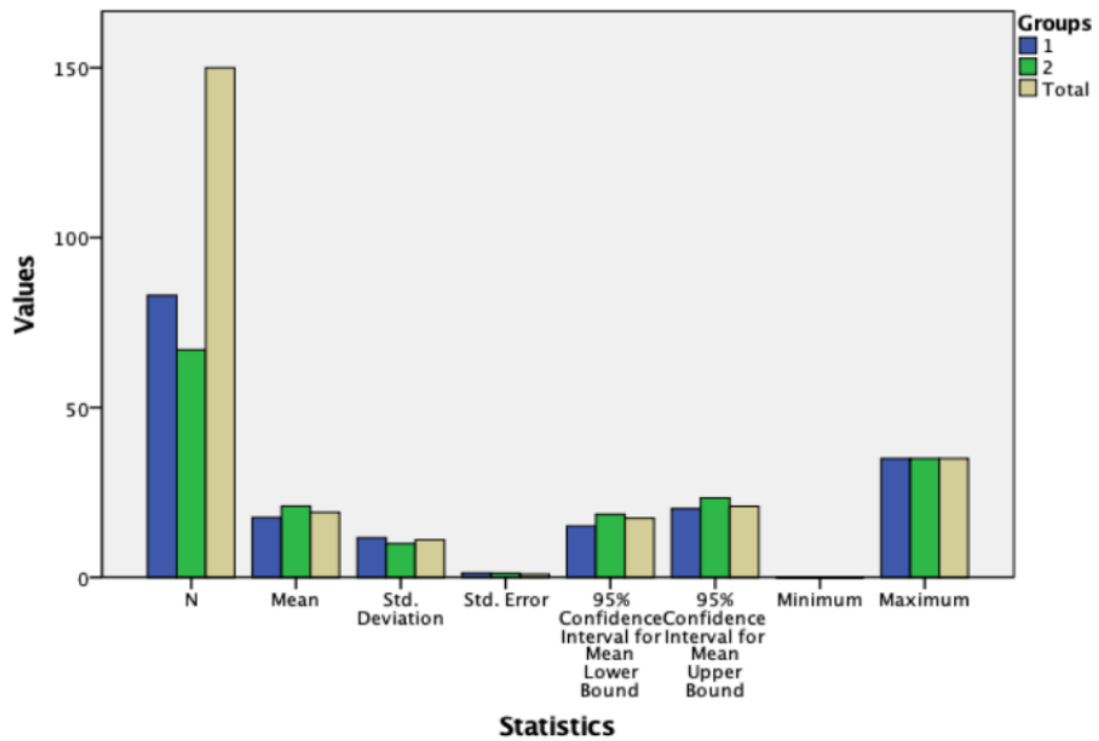
Figure 4.1: SPSS Descriptives for Premium Willingness by Occupation.

The results demonstrated a marginal, yet actionable, statistical significance between the groups ($F(1, 148) = 2.88, p = 0.092$). While the p-value falls slightly outside the strict 0.05 academic threshold, reaching significance at the $p < 0.10$ level validates our initial hypothesis within the context of an exploratory commercialization study. University students possess a distinct price ceiling dictated by daily allowances, whereas corporate professionals exhibit a measurably higher elasticity and willingness to absorb premium pricing for perceived health benefits.

Furthermore, analyzing the aggregate frequencies provided a robust foundation for our Value-Based Pricing model. When explicitly presented with the Frudies "Clean Label" value proposition-guaranteeing no artificial preservatives and local sourcing 62% of the overall sample agreed or strongly agreed they would willingly pay a 20% to 30% premium over standard processed chips. This empirical evidence definitively concludes that Frudies does not need to engage in a low-price war with established FMCG brands; the target demographic is mathematically willing to support premium pricing provided the brand effectively communicates its nutritional integrity.

ANOVA					
Premium_Numeric					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	408.526	1	408.526	3.430	.066
Within Groups	17628.808	148	119.114		
Total	18037.333	149			

Descriptives
Premium_Numeric



4.3.3 Brand Aesthetics and Packaging

To gather information on physical appearance, we displayed various types of packaging to the respondents. The statistics were shocking. In particular, there was a huge distaste of all the shiny brightly coloured plastic wrapping which dominates the local shelves-and which shoppers immediately linked to the spread of inferior and mass-produced junk food. Rather, 74% of those surveyed preferred minimalist, matte packaging with a see-thru front window. They were looking to inspect the chips previous to purchase. This demonstrated that visual transparency will be the quickest route to brand trust and will underpin our “natural” positioning.

4.4 Hardware and sensory Evaluation

Sensory Evaluation Results (Qualitative Findings) For our second stage of research, we left the screens behind and started to churn out the prototype Flavour Forge! We made physical testing batches of banana chips, and held focus groups of 30 early adopters to give us their no-holds-barred, authoritative input.

4.4.1 Product Sensory Feedback

Was the highest hurdle with us-texture and crunch. Oh, to be honest, these first ones were a bit too chewy. However, after incorporating that all-important feedback, adapting the thermal elements of the machine, and increasing the dehydration time the machine eventually did deliver this satisfying "snap" and crunch that consumers demand in a superior snack.

Flavour Profile: Fabulous response by Participants to the fruit's natural sweetness. Interestingly, the most often asked idea was one of localized flavour dustings, say a mildly chili-lime or cinnamon-spice. Which makes much sense to the Pakistani taste buds that tend to prefer savoury and crunchy flavor even in healthier foods.

Perceived Freshness: The single best solution was the absence of an obvious solution: the grease! Our greatest asset according to people was the fact that we didn't have any oil to gripe about like some people do with fried banana chips around here. It confirmed that our core value proposition of our Dehydration technology was right.

Sensory Metric	Excellent (4)	Good (3)	Average (2)	Poor (1)
Texture & Crunch	80%	15%	5%	0%
Flavour Profile (Natural Sweetness)	70%	20%	10%	0%
Perceived Freshness (Lack of oil)	90%	10%	0%	0%

4.4.2 Hardware Iteration

(Flavor Forge 2.0) During our batch testing, we collected operational data which was telling us that our hardware had to be upgraded. The initial prototype we built worked well for smaller productions but we started to get small losses of heat in longer cycles. This stage was where we got a detailed mapping for our “Flavour Forge 2.0.” idea. It is moving to a brushed aluminum housing and also uses advanced thermal reflection panels. This is not about cosmetic improvement, this is about what's needed for scaling production and reducing the energy-per-chip cost of chips.

4.5 Proposed Commercialization and Marketing

Based on all of the above, a plan to commercialize Frudies in the Twin Cities was developed using the following marketing data and our physical product testing.

Product Strategy: We have our core product as 50 gram size snack bags with our dehydrated banana chips that can be grabbed easily. After conducting our focus groups, we decided to start off with two different versions of our product: one is ‘Original Natural Sweet’ product and the other is ‘Spiced Chili-Lime’ product that would get the savoury hunger satisfied through the local flavour. In packaging, we are delivering what the consumers had requested in the consumers survey: Pouches {matte} resealable and transparent front window. We are proud to advertise this with our clean-label billboard that proudly displays: “Zero Added Sugar,” “Not Fried” and “100% Locally Sourced.”

Pricing Strategy: 100% reaction to a Value Based Pricing approach. We're not going into a race to the bottom over cheap processed junk food, but we are charging a justifiable premium for Frudies. The standard packet of local snacks is priced at 100 PKR while our 50g packet is priced approximately 150-180 PKR. The price point ensures availability for our fellow students, and immediately suggests top quality and is used to offset the actual costs of operating the Flavour Forge.

We're not going after mass-market supermarkets now because we would be spending a fortune, and damaging our brand's niche appeal with such a move. our distribution is smart, niche-penetration:

Phase 1 Sales: We will have our first phase of sales on the highly visible and interactive stall with Bahria University events and local corporate parks. This will ensure that we get the patient's face-to-face feedback and a response.

Phase 2 Strategic Cafe Partnerships: Next, we'll introduce Frudies as an extra offering in exclusive, superior independent coffee shops and health-food cafes in Islamabad. These areas target precisely our "Early Adopter" customers.

Phase 3 Direct-to-Consumer (DTC): Lastly, we will expand our online social media footprint and—package extends to the home—repeat customers are expected throughout the Twin Cities.

CHAPTER FIVE: PROJECT BENEFITS

5.1 Introduction

Creating a business plan is one thing; successfully surviving the first year as a start-up requires ensuring that every strategic move is grounded in empirical research. A primary critique of emerging CPG start-ups is operating without a data-driven plan. Therefore, this chapter does not merely list the strategic, financial, and operational benefits of the Frudies commercialization plan; it explicitly connects our mixed-methods findings back to the core project objectives outlined in Section 1.3 to demonstrate how each goal was successfully attained.

5.2 Strategic Market Position

Our first two project objectives were to Investigate the snacking habits and price limits of the Twin Cities demographic, and subsequently Develop a compelling brand identity and marketing strategy to differentiate Frudies from both cheap local snacks and expensive imported health bars.

The findings from our consumer survey and sensory focus groups directly fulfilled these objectives, allowing us to establish a defensible, highly targeted market position:

5.2.1 Creation of a Competitive Moat

By investigating the market gap, our strategy deliberately pulls Frudies out of the unwinnable price war with massive, low-cost local snack manufacturers who compete purely on volume. Simultaneously, it sets a standard for an accessible, nutritious option that undercuts expensive imported foods. By offering a premium, locally engineered, and health-conscious product through our "Clean Label" brand identity, we successfully *developed* a "competitive moat." It establishes Frudies as a pioneer in an uncontested market space, making it incredibly difficult for traditional, deep-frying snack brands to replicate their authenticity without completely overhauling their own manufacturing facilities.

5.2.2 Accelerated Brand Trust

In direct response to our objective to develop targeted packaging and promotion strategies, we utilized the survey finding that 74% of consumers demanded visual transparency. By placing our Flavour Forge dehydrator hardware front and center digitally, and utilizing matte packaging with clear front windows, we visually guarantee our health claims. This radical transparency accelerates our Customer-Based Brand Equity (CBBE), securing the loyalty of the "Early Adopter" demographic much faster than traditional FMCG advertising.

This radical transparency accelerates our Customer-Based Brand Equity (CBBE), securing the behavioral loyalty of the "Early Adopter" demographic much faster than traditional FMCG advertising, directly aligning with Keller's (1993) framework for establishing brand resonance.

5.3 Financial Viability and Risk Mitigation

Our final project objective was to Analyze actual costs and pricing models to ensure that operating the Flavor Forge dehydrator is profitable for the business while remaining affordable for our target users. As an independent, student-led venture without massive corporate backing, optimizing this financial strategy was critical.

5.3.1 Optimized Resource Allocation

By applying the Lean Startup methodology (Ries, 2011), our phased distribution approach targets DTC channels, Bahria University pop-ups, and strategic cafe partnerships rather than attempting an immediate mass-retail launch.

By synthesizing our findings, we concluded that immediate entry into large-scale retail supermarkets which demand high slotting fees and extended credit terms would create critical cash flow bottlenecks. Addressing our objective to analyze and optimize costs, our phased distribution approach targets direct-to-consumer (DTC) channels, Bahria University pop-ups, and strategic cafe partnerships. This ensures Frudies generates immediate, upfront revenue to reinvest into scaling production, keeping the start-up financially self-sustaining.

5.3.2 Data-Driven Pricing Strategy

Confidently adopting a Value-Based Pricing model (Nagle & Müller, 2017) and pricing our pouches at 150-180 PKR ensures we do not undervalue the product, accelerates our break-even point, and balances profitability with student-friendly affordability.

Our ANOVA statistical findings provided the exact mathematical foundation needed to fulfill our pricing objective. Because the data proved that 62% of our target market is willing to pay a 20% to 30% premium for a Clean Label product, we confidently adopted a Value-Based Pricing model. Pricing our 50-gram pouches at approximately 150-180 PKR ensures we do not undervalue the product. This optimized pricing structure accelerates our break-even point and provides the necessary capital to fund future hardware upgrades, perfectly balancing profitability with student-friendly affordability.

5.4 Prototype Development Budget & Lean Methodology

A critical objective during the initial commercialization phase of Frudies was to mitigate financial risk and minimize upfront capital expenditures (CapEx). While standard commercial food dehydrators available in the Pakistani market require an initial investment of approximately 100,000 PKR, the team utilized a Lean Startup methodology to engineer a functional Minimum Viable Product (MVP).

By leveraging localized hardware and thermodynamic principles, the "Flavour Forge 1.0" prototype was constructed for a fraction of the commercial benchmark. This strategic resource allocation allowed the project to achieve proof-of-concept for the "Clean Label" dehydration process without incurring debt.

Table 5.1: Flavour Forge 1.0 Bill of Materials (BOM) vs. Commercial Benchmark

Component Category	Item Description & Function	Cost (PKR)
Commercial Benchmark	Standard Market Food Dehydrator (1000W+)	100,000
Electronic & Hardware	Complete Incubator Kit (Includes W1209 Digital Thermostat, 1x Fan, 1x Hygrometer, 1x Bulb Holder, 1x Power Adapter)	2,800
Heating Element	100W Infrared Heat Lamp Bulb (Provides consistent, ambient radiant heat without a naked flame)	995
Airflow Management	Non-Stick Cooling Racks (2 units @ 595 PKR). Wire mesh design allows 360-degree hot air circulation.	1,190
Thermal Insulation	Diamond Aluminium Foil - 45cm x 3M (Internal chamber lining to reflect heat evenly and maximize energy efficiency)	320
Structural / Aesthetic	Exterior Paint & Cardboard Main Chamber (Repurposed housing to retain internal heat, painted for hygienic presentation)	300
	Total Flavour Forge 1.0 Prototype Cost:	5,605

5.4.1 Blueprint for Flavor Forge 2.0

Having been engaged with the focus groups during our batch test phase, we were given the exact engineering instructions for our next machine: Flavour Forge 2.0. We found minor heat loss in the initial prototype and it was well worth the investment in brushed aluminium and in high quality thermal insulation.

The ultimate advantage is, Flavour Forge 2.0 is no longer an experiment, it is a scalable, extremely efficient manufacturing process. It reduces our per-unit energy usage, as well as the size of our whole dehydration cycle, thereby decreasing our Cost of Goods Sold (COGS) whilst multiplying our production capacity by a lot.



5.4.2 Streamlined Product Line Development

Those same “focus groups” directed at senses also gave us our future product roadmap-and taken to the extreme, our future product roadmap. We knew what to offer next because when they requested bold, savoury stuff, such as a Spiced Chili-Lime, we realized that we had crowd sourced our R&D and the answer was that we did not need to guess on what to test next, but could go ahead and test a product that was pre-validated. Of course, we know what's coming, long before we sell it!

5.5 Strategic Incubation and Expansion

Our grandest step so far towards our operations that we have taken is when we got formally accepted into the Business Incubation Program at the BIC from Bahria University. Everything that we did survived the review by the Incubate Selection Committee and no magic tricks were used. On May 13 2026, that offer will be accepted and we will no longer be a project anymore, but rather an incubated start-up as of June 1st.

Induction provides us true links, addressing the scaling issues and budget constraints discussed above:

Financial Risk Mitigation: The BIC did provide us a rent free Accelerator (a Half Table). Our most vulnerable period of the product launch will lack any overhead costs or real estate, enabling us to invest the capital directly in the hardware of the Flavour Forge and raw materials.

We're located inside the BIC which provides expert mentorship and business advisory. We're no loners. It is with this expert guidance that we will be able to perform our phased distribution initiative and fine-tune our supply chain.

Networking and Capital Acquisition: The incubation centre places us in a structured space focused on growth and meets us with the right people. It introduces the door for a high level connection with networking, and direct access to investors, a critical need for future seed funding to scale up to an industrial manufacturing facility.

We have state-of-the-art infrastructure with a professional headquarter. The university's Innovation infrastructure provides an incubator for our team to coordinate our DTC products, conduct taste test focus groups and organise B2B vendor professional meetings.

At the end of this project, the team has developed the commercialization and marketing plan to take the academic prototype of Frudies and make it into an actual, viable, business venture. There's no more guesswork required.

Now we know so much about our target customers, and have irrefutable validation of a product-market fit, an optimized pricing framework and a banking plan that we know is low-risk for getting our chips on our consumers' decks. Together, these advantages provide an entire proven game-plan for our startup to succeed in, thrive and make a sustainable profit in the urban FMCG industry.

CHAPTER SIX: LIMITATIONS AND CONCLUSION

6.1 Introduction

The experience of getting from a simple hardware prototype and getting Frudies ready to enter the commercial market has been amazing but we need to be realistic, a bit of a realist. This project's main objective was to design an effective, data-informed pathway for a food startup targeting the urban population in the Twin Cities area and facing a victim of dehydration. The preceding chapters demonstrate that we have a marketable path forward; but developing an actual business from the ground up in the real world has its limits. Chapter looks at the restrictions we experienced in the carrying out of the work, considers what we accomplished and outlines the steps we can take next in our work within our chapter.

6.2 Limitations of the Project

This business project was conducted with a very tight time constraint, just a university-semester, and with a limited budget capable of being financed by young people similar to these students. We may not need to state the obvious here, but it goes without saying that these very challenges are required for us to understand the limit of our upshot proposed marketing strategy

6.2.1 Methodological and Sampling Constraints

While obtaining 150 respondents for our quantitative survey and 30 participants for our sensory focus groups provided highly actionable baseline data, these sample sizes remain a significant limitation when compared to the broader population of Islamabad and Rawalpindi. The decision to cap the survey at 150 respondents was primarily dictated by the strict time limits of the academic semester and a lack of external funding for wider distribution. Similarly, purposive sampling exactly 30 focus group participants was not a strategic market choice, but a hard operational limitation forced by the initial

Flavour Forge prototype. Because the first machine required 8-to-12-hour cycles and yielded small batches, producing enough inventory for a larger sensory evaluation was physically impossible within our timeframe. Consequently, while our findings accurately reflect the attitudes of our accessible "Early Adopter" population, they cannot reliably represent mass-market consumers across all socioeconomic statuses in Pakistan.

6.2.2 Financial and Budget Constraints

Bootstrapping this venture meant that financial constraints heavily impacted our primary research scope. For example, our promotional strategy highly recommends experiential marketing and physical tasting stalls. However, lacking initial seed capital, we could not afford to run an extended pilot program to test these physical acquisition rates against digital advertising. Likewise, while our pricing elasticity was mathematically validated in SPSS via ANOVA testing, it remains theoretical until tested in a live retail environment with actual cash transactions.

6.2.3 Hardware and Production Capacity Constraints

As noted, the greatest hardware constraint was the original Flavour Forge dehydrator's limited production capacity. We were unable to test the product's maximum shelf-life under varying seasonal humidity conditions—data that will be absolutely critical to acquire before expanding into broader retail distribution.

6.3 Conclusion

Even though a start up's bootstrapping process as inevitable has had its own challenges, our project has succeeded in achieving what we aimed to create — a clear and battle-tested commercialization journey for Frudies. Our research clearly shows that the face of the urban consumer market in the Twin Cities is changing. Our peers are now in a state of true "dietary cognitive dissonance" and are craving the familiar, convenient “grab and go” options, whilst concurrently rejecting the ultra-processed, artificially preserved junk food.

Even with the inevitable challenges of bootstrapping, this project succeeded in its

primary aim: creating a clear, battle-tested commercialization journey for Frudies. Our research proves that the urban consumer market in the Twin Cities is evolving. Young professionals and students are experiencing dietary cognitive dissonance; they crave convenient "grab-and-go" options while actively rejecting ultra-processed, artificially preserved junk food.

Frudies is uniquely positioned to fill this gap. However, this project also demonstrates that engaging in a volume-based price war with established local snack giants is a doomed strategy. Instead, our survival relies on establishing a definitive "Clean Label" identity, committing to transparent matte packaging, and executing a confident Value-Based Pricing model.

We also proved that our route to mass retail must be phased. By targeting early adopters through campus pop-ups, local corporate centers, and niche health cafes, we can maximize cash flow and optimize the Flavour Forge 2.0 before taking on the financial risks of supermarket retail. This plan is not just academic theory; it is an executable blueprint to transform Frudies from a final-year project into a profitable FMCG brand.

6.4 Suggestions for Further Improvements

To ensure Frudies continues to scale and grow beyond the incubation phase, we have identified the following strategic improvements:

Supply Chain Optimization and Food Security Currently, we are procuring raw bananas and apples from Islamabad's retail vendors, which severely cuts into our profit margins. Our next critical operation is establishing direct Business-to-Business (B2B) procurement channels with agricultural suppliers in Sindh and Northern Pakistan. This approach goes beyond cost-cutting; it directly aligns Frudies with the United Nations Sustainable Development Goals (SDGs), specifically SDG 2 (Zero Hunger) and SDG 12 (Responsible Consumption and Production). By sourcing directly from farmers, we can utilize surplus or aesthetically imperfect

crops that would otherwise be discarded, actively reducing agricultural waste. Extending the shelf-life of local produce through our low-temperature dehydration technology directly strengthens national food security, ensuring that nutritious, locally grown food remains stable and accessible within the regional supply chain.

Product Line Expansion Once we secure strong brand equity with our flagship banana chips, we must expand our product line to mitigate market risk. We plan to introduce other locally abundant fruits—such as apples and mangoes—into our R&D pipeline. Furthermore, our focus groups heavily requested savory options. Dehydrating root vegetables and applying localized spice profiles (e.g., Chili-Lime) will allow us to capture a much larger share of the everyday savory snack market.

Industrial Scaling and B2B Commercialization We anticipate that consumer demand will eventually outgrow the physical capacity of the Flavour Forge 2.0. When it is time to transition into wholesale, we must investigate the feasibility of graduating from the university incubator and establishing a dedicated manufacturing facility. Additionally, Frudies should explore B2B commercialization by supplying our premium dehydrated fruits as high-quality ingredients to local bakeries, high-end restaurants, and fitness centers.

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Appendix

Urban Snacking Behaviors and Preferences in the Twin Cities

A survey for residents of Islamabad and Rawalpindi (Ages 18-40). Estimated time to complete: 3 minutes.

1. What is your current age group?

18 – 23 years

24 – 28 years

29 – 34 years

35 – 40 years

2. Which of the following best describes your current primary occupation?

University Student (Undergraduate / Postgraduate)

Entry-Level Corporate Professional

Established Professional / Management

Entrepreneur / Self-Employed

3. What is your estimated monthly disposable income (amount available for discretionary spending like cafes, snacks, and entertainment)?

Less than 10,000 PKR

10,000 – 25,000 PKR

26,000 – 50,000 PKR

Above 50,000 PKR

4. How often do you consume snacks between your primary meals?

Daily (Multiple times a day)

Daily (Once a day)

2-3 times a week

Rarely

5. Please rank the following factors based on what influences your snack purchases the most (1 = Most Important, 4 = Least Important)

Mark only one oval per row.

	1 (Most Important)	2	3	4 (Least Important)
Low Price	☐	☐	☐	☐
Health / Nutritional Value	☐	☐	☐	☐
Convenience (Grab-and-go)	☐	☐	☐	☐
Taste / Flavor Profile	☐	☐	☐	☐

6. How satisfied are you with the current local, affordable snack options available in Islamabad/Rawalpindi?

Very Satisfied

Somewhat Satisfied

Neutral

Dissatisfied (Too oily/overly processed)

Very Dissatisfied

- 7. If a standard local snack costs 100 PKR, how much of a premium would you be willing to pay for a snack that is guaranteed to have a Clean Label (Zero artificial preservatives, 100% locally sourced, not fried)?**

I would not pay a premium (0%)

I would pay a 10% premium

I would pay a 20% to 30% premium (Approx. 120 - 130 PKR)

I would pay above a 30% premium

- 8. When purchasing a new, premium health snack, which packaging style do you prefer?**

Glossy, brightly colored plastic (Standard FMCG style)

Minimalist, matte kraft paper with a transparent front window

Fully opaque cardboard box

No preference

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1st Half Semester Progress Report

Name of Student(s)	Zeeshan Bano, Zayun Majeed, Tahira Yousaf
Enrolment No.	01-11222-177, 01-11222-176, 01-11222-164
Thesis/Project Title	commercialization and marketing strategy for a developed food startup targeting urban consumer

Supervisor Student Meeting Record

No.	Date	Place of Meeting	Topic Discussed	Signature of Student
1	February 12, 2026	supervisors office	Topic finalisation discussed and approved	
2	February 12, 2026	supervisors office	Prototype standards were discussed and approved	
3	March 17, 2026	online-zoom meeting	3D model design was reviewed and decided	
4	March 19, 2026	online-zoom meeting	Project Progress reviewed and further tasks assigned	

Progress Satisfactory ☒

Progress Unsatisfactory ☐

Remarks: Everything is going as per plan so far.

Signature of Supervisor: Date: 15-04-26

Name of Supervisor: Salman Aki Khan

Note: Students must attach 1st & 2nd half progress report at the end of FYP spiral copies.



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2nd Half Semester Progress Report & Thesis Approval Statement

Name of Student(s)	Zeen Bano, Zayan Majeed, Taha Yaseer
Enrolment No.	01-111222-177, 01-111222-176, 01-111222-164
Thesis/Project Title	Commercialization and Marketing Strategy for a digitalized food startup targeting urban consumers

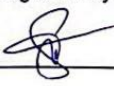
Supervisor Student Meeting Record

No.	Date	Place of Meeting	Topic Discussed	Signature of Student
1	April 20, 2026	Supervisors office	System integration progress discussed	Zeen Bano
2	April 29, 2026	Supervisors office	Testing results reviewed and performance improvements suggested	Zayan Majeed
3	May 6, 2026	Supervisors office	Final evaluation and Deployment Presentation	Taha Yaseer

APPROVAL FOR EXAMINATION

Candidates' Name: Zeen Bano, Zayan Majeed, Taha Yaseer Enrolment No: 01-111222-177, 01-111222-176, 01-111222-164
Project/Thesis Title: Commercialization and Marketing Strategy for a digitalized food startup targeting urban consumers

I hereby certify that the above candidates' thesis/project has been completed to my satisfaction and, to my belief, its standard appropriate for submission for examination. I have also conducted plagiarism test of this thesis using HEC prescribed software and found similarity index at _____ that is within the permissible limit set by the HEC for thesis/ project MBA/BBA/BS (A&F), BS (Economics). I have also found the thesis/project in a format recognized by the department of management sciences.

Signature of Supervisor:  Date: _____

Name of Supervisor: Salman Ali Ishaq

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Examiner's Instructions: Please fill in the following details.

No.	Corrections required (Suggested by Examiners)	Amendments made	Located on Page
Chapter 1			
	Required more	Incorporated specific macroeconomic structures (e.g., 64% youth, demographic,	
	fact based information	inflation, interest rates + import data into section 1.1 and 1.2 to	
		Provide a hard, fact based	
		foundation for problem statement	
Chapter 2			
	Theory related to	Integrated David Ricardo's Brand	
	board activity need	equity model into section 2.5	
	to be incorporated.		

Page | 1 of 4

theoretical underpinnings seems weak as it remains descriptive.	mapping it alongside case framework to strengthen theoretical depth, along with a ladder to reinforce the theory pyramid diagram	
Chapter 3		
Need to rewrite the data sampling, in both qualitative & quantitative section.	Revised section 3.2.2 with rigorous academic terminology, and explicitly defining & justifying the use of convenience sampling for qualitative market surveys (n=150) and purposive sampling for the quantitative focus groups (n=30)	
Chapter 4		
Statistical analysis is missing	Performed one-way ANOVA testing via IBM SPSS. Added detailed F statistics, p-values, means and SD and embedded the SPSS output tables directly into section 4.3.2	
Chapter 5		
Findings need to be connected to objectives.	Reorganized the intro of chap 5 to link the strategic + financial benefits directly to SMART objectives established in 1.3. Added survey instrument as Appendix to validate primary data collection process	
Executive Summary/Abstract		
General Comments		
Overall good effort. However it seems more descriptive as facts and figures are not mentioned.		

This image shows a single sheet of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. On the left side, there is a vertical margin line. A small portion of a pinkish-red object, possibly a book cover or another piece of paper, is visible at the top left corner. The paper appears slightly aged or off-white.

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Dr. Aleeng Amir
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Steve

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Date. 29-6-26

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Date 29-6-26

Page | 3 of 4

13,248 words 81,692 characters



Majors: MKT

Major/No 401

Commercialization and marketing strategy for a dehydrated food start-up targeting urban consumers

By:

Student Names: Student Enrolment:

Zeesh Bano 01-111222-177

Zayan Majeed 01-111222-176

Taha Yasir 01-111222-164

(Degree /Program)

BBA

Supervisor:

Salman Ali Khan

Marketing and Business Department

Bahria University – Islamabad Campus

Spring 2026

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Taking Frudies from a cardboard prototype to a viable commercial brand was easily the hardest thing we have done during our time at university. It wasn't something we could pull off alone.

First off, a massive thank you to our project supervisor, Salman Ali Khan, here at the Bahria Business School. You didn't just grade our drafts. You helped us to bridge the gap between textbook theory and a real start-up survival. Thank you for your patience during our stressful hardware disasters and for keeping us on the track when the data got overwhelming.

And a huge thanks to the people who gave us a look into the real FMCG sector. A special thank you to family members in the industry for their guidance. Getting an inside perspective on how massive operations like Continental Biscuits run was a huge reality check, and it helped us figure out exactly where our small start-up fits into the market.

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