A study on impact of packaging on consumer buying behaviour towards FMCG products in the state of Goa

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DECLARATION BY STUDENT

I hereby declare that the data presented in this Dissertation report entitled, **"A study on impact of packaging on consumer buying behavior towards FMCG products in the state of Goa"** is based on the results of investigations carried out by me in the Master of Commerce program at the Goa Business School, Goa University under the Supervision of Senior Prof. Dr. Y.V. Reddy and the same has not been submitted elsewhere for the award of a degree or diploma by me. Further, I understand that Goa University or its authorities will be not be responsible for the correctness of observations / experimental or other findings given the dissertation.

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COMPLETION CERTIFICATE

This is to certify that the dissertation entitled **"A study on impact of packaging on consumer buying behaviour towards FMCG products in the state of Goa"** is the record work carried out by Ms Sakshi Sanjay Mahale under my supervision in partial fulfillment of the award of the degree of Master of Commerce at the Goa Business School, Goa University.

Date: 30/04/2024

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ABBREVIATION

FMCG	Fast Moving Consumer Goods
CPG	Consumer Packaged Goods
CBB	Consumer Buying Behaviour
PC	Packaging Colour
PS	Packaging Shape
PI	Packaging Image
PD	Packaging Design
PM	Packaging Material
NC	Nutrition information and Label Claims
BR	Brand Recognition

Abstract

A successful marketing strategy usually depends on a firm's understanding of its customers, what they need and how it persuades them to buy from it. This research paper examines the impact of packaging on consumer buying behaviour towards FMCG products in the state of Goa. The consumer decision making process is strongly influenced by product packaging. Following the increasing importance of healthiness and sustainability for many consumers, manufacturers increasingly try to give products a healthier image, for instance through packaging design. Thus the aim of the study is to measure the effect of elements of packaging (i.e. packaging colour, packaging image, packaging material, packaging design, and packaging shape) and nutritional information and label claims on consumer buying behaviour and the impact of elements of packaging on brand recognition. Accordingly, online survey questionnaire was employed to collect from 370 regular consumers. Results indicate that every aspect of packaging aside from shape and design influences consumers' purchasing decisions. As a result, management should concentrate on these aspects to encourage consumers to buy more various products. Whereas there was a negative impact of nutritional information and label claims on consumer buying behaviour. Further it was investigated that each elements of packaging has a positive relationship with brand recognition. This model can be utilized by marketers and manufacturers to identify and concentrate on factors that persuade consumers to purchase a product; and omit undesired elements, allowing them to reduce costs and focus on innovative packaging elements.

Keywords: Marketing, Packaging, FMCG, Consumer Buying Behaviour, Brand Recognition, Goa

Chapter 1: INTRODUCTION

1.1 Introduction

In the past years, the sole purpose of packaging was to safeguard and provide some functional advantage to products. However, as time passed, the role of packaging evolved as a communication tool to attract buyers' attention and convey the worth of a product at the point of sale. Businesses have come to understand that there are several aspects that affect consumers' decision-making processes, and product quality is just one of them. Hence, manufacturers of various products concentrate their endeavors on the element that possesses the most potential to capture the interest of consumers and persuade them to buy—the packaging. It is intended for the packaging to compel consumers to make a conscious or unconscious decision to select the product over one of its rivals. Packaging can help convenience marketers engage customers and gain a competitive advantage over competitors. The rise in competition has prompted manufacturers to consider different methods of attracting customers to their products. In the current market situation, there are a large number of organisations that offer the same products. In a single market visit, consumers encounter thousands of brands. In this competitive environment, packaging has become an effective tool to capture consumer purchase intentions (Ranjbarian, 2009). The most prominent packaging attributes, which contribute to the packaging appearance at first glance, are shape and material (Suzana Poslon et al., 2021). Furthermore, when choosing a product, consumers start to touch the packaging until they make a they make a purchase. They cannot see authentic food; they only know product information through packaging (Chandon, 2013; Rettie & Brewer, 2000).

The role of packaging is changing from protector to information provider. Today, customers are more concerned about their health and the items they consume as a result of the increase in health problems in recent years, which may be observed in their purchasing habits. According to Onel and Mukherjee (2016), with an increase in environmental problems that raises awareness in the community and triggers a shift in one's behaviour towards healthier behaviour, consumers are willing to pay for these healthy products at a higher price for health reasons. The use of nutrition and health claims as a tool to highlight health-related aspects of food products is a widely used practice in North America and Europe (Devi et al., 2016). People nowadays like to check the nutritional information and labelling on products, such as sugar content, fat content, and cholesterol levels. Previous literature described nutrition and health claims as highly successful tools to promote sales (Wansink, 2005). Several studies showed that consumers preferred a nutritional enhancement in 'unhealthy' food because it reduced the consumer's guilt for eating unhealthily (Cornish, 2012).

In this modern era, it is becoming harder for consumers, who interact with countless messages every day, to enable their purchasing behaviour. For this, packaging plays an important role in attracting consumers and enabling communication with them (Yildiz, 2010). The way a product is presented to consumers when they walk into a supermarket or other retail establishment to purchase goods is what initially draws their attention. Bright colors, distinctive shapes, and cartoon characters on the product set it apart from the thousands of other products on the shelf, and this helps consumers recognize the brand because of these packaging elements. According to Rundh (2005), a package attracts consumer's attention to a particular brand, enhances its image, and influences consumer's perceptions about the product. One of the most crucial components of a brand is its packaging, which draws customers' attention from the outset and raises brand

recognition to boost the brand's value. Recognition occurs when a consumer chooses to make a purchase at the point of sale, usually based on visual cues. Nonetheless, the customer's initial opinion of the product is formed when they see it for the first time at the point of sale. Consumers usually tend to perceive a product positively if they are impressed with innovative, creative, and effective product packaging, thus increasing the value added for that product (Maznah et al., 2011). Packaging is an essential component of the branding process since it helps in the recognition of the brand and communicates the company's image and identity.

1.2 FMCG Sector

The FMCG industry saw very little investment between 1950 and 1980. The lesser purchasing capacity of the local population led to a preference for necessities over luxury goods. The Indian government was inclined towards favouring the local shops and retailers. People's desire for a wider range of items between 1980 and 1990 prompted FMCG companies to expand their product offerings. The number of potential customers is rising as a result of the ongoing global population growth. There are more individuals with a wider range of demands and tastes, which increases the demand for FMCG goods.

In the last two decades, India's FMCG sector has experienced a notable metamorphosis. Consumer packaged goods (CPG), sometimes known as fast-moving consumer goods (FMCG), are things that are inexpensive, rapidly sold, and in high demand. Because consumers frequently utilize these products, they are referred to as "fast-moving" goods because they go from store or supermarket shelves quickly. India's FMCG sector combines the widest range of product categories, including food and drink, personal care and cosmetics, health care, and home care. The 4th largest economic

sector in India is the fast-moving consumer goods (FMCG) industry. With a growth rate of 14.7%, the FMCG market is predicted to reach around $220 billion by 2025.

The global FMCG market is expected to reach $18,939.4 billion by 2031, at a Compound annual growth rate of 5.1% from 2022 to 2031. The food and beverage sector is one of the essential components of the FMCG market, which accounts for about 3% of its Gross Domestic Product. According to a Wharton University study, 70% of judgments about purchases are made at the moment of sale. Public institute for sector opinion polling (Ipsos) a multinational market research and consulting firm has even discovered that 72% of consumers base their purchasing decisions only on the package they choose. A company needs to be continually inventing and understanding the newest customer trends and tastes in order to thrive in today's age of swiftly changing technology and rapidly changing consumer desires.

1.3 Packaging as a Marketing tool

Marketing is one of the most important business operations. Making an impression on potential customers is the main goal of marketing. Because it creates a first impression in the minds of consumers, how businesses package their goods matters in marketing. First impressions, as we all know, have a significant impact on how people perceive something. Businesses apply the same concept to their packaging. It is crucial to keep in mind that visually striking packaging might raise the product's perceived worth in the eyes of the buyer. The effectiveness of a product's packaging as a marketing strategy depends on the components it includes. The following four components will increase the effectiveness of the packaging: it needs to be created with the intended audience in mind; it ought to grab the interest of the customer; it has to highlight the product titles and brand; and it needs to highlight the advantages of the product. Since the product's exterior appearance is the first thing a prospective buyer will see, it can be an excellent marketing tool. No matter how strategically the brand is marketed, fewer buyers will be persuaded to add the product to their virtual or physical carts if it comes with subpar packaging. Building a design that is utilised to spread information about the company and establish brand identification costs a comparatively substantial sum. But with the help of effective packaging, customers and the brand develop a deep bond, and a healthy amount is saved. Based on studies, it is imperative to have an efficient brand communication strategy because the market for goods is already fully saturated. Packaging needs to be visually striking and adhere to the legal, regulatory, and cultural requirements specific to the related market. Companies spend close to 40% of the selling price of a product on ensuring that it has good packaging (Argo & White, 2012; Gómez et al., 2015).

“According to Kuvykaite et al. (2009), packaging is a marketing communication in order to command consumer attention and indicate the value of a product at the point of sale. Apart from these, recent years of research have also demonstrated that ‘packaging’ is another element that comes to fulfill the marketing mix as the 5th ‘P’, due to the broad variety of introduced products, and especially retail products on the market”.

Visual elements of packaging play an important role, which represents products for consumers, especially for products where the level of consumer involvement is low and when they are pursued by time or in a hurry (Silayoi and Speece, 2004). In actuality, a variety of package elements influence consumer behaviour as well as draw attention from buyers. Experts typically divide these elements into two main categories: verbal and nonverbal cues. Non-verbal cues include things like colours and graphics, as well as brands, logos, information, and product names. These are all combined under the umbrella term of elements of packaging or packaging design, which literally translates to "what you see is what you choose." In today's world, people primarily base their decisions about which products to buy on what catches their attention.

In a study on consumer purchasing behaviour, respondents stated that labels with information like fat content, calories, vitamins, and minerals appeal to them because they help consumers make sense of the information. This demonstrates that consumers pay close attention to the packaging and have a clear grasp of the health advantages of the products based on the labels. As a result, visual components help consumers make final decisions (Aday & Yener, 2014).

1.4 Functions of Packaging

The functions which packaging is required to perform are fundamental, complex, and manifold (Hellström & Saghir, 2007).

The Key Roles and Functions of Packaging (Adapted from Simms & Trott, 2014)

Key roles and functions	Elements of packaging's role
Protection	- Effects on the supply chain - Tamperproof - Role in transportation and logistics - Product safety and quality
Containment	- Preservation/shelf-life of the product -Protection from hazards: mechanical, chemical; environmental; climatic; bacteriological - Aids customers use of product - Containing and holding product - Quantity/amount - Facilitating/convenience handling - Affect on quality - Compatibility and constraints
Identification	- Product identification - Labeling (effective) - Information: Copy/illustrations on use
Marketing communications	- Supporting marketing communications - Supporting promotion of other products - Sales/marketing - Positioning
Cost	- Transport and storage costs - Process cost implications
User convenience	- Openability/access - Reclosability - Carrying - Dispensing facilities - Affecting consumer value - New solutions - Consumer convenience
Market appeal	- Suitable quantity/format - Consumer and market appeal - Branding - Reinforcing the product concept - Ability to improve sales
Innovation	- Facilitating commercialization - Innovation and technology

1.5 Different Packaging Materials used in FMCG Sector

1. Plastic:- Plastics are inexpensive, versatile, and durable, which makes them a popular choice for packaging. In the domestic care and laundry category, plastic is the most popular packaging material among consumers worldwide. This is followed by health care, beauty and grooming, and baby care. Its strong resistance to chemicals and water, together with its flexibility to be molded into various shapes, make it widely employed across the aforementioned areas. They are perfect for portability because they are lightweight and resistant to breaking. However, because of its effects on waste and pollution, plastic packaging has sparked worries about the environment. Sustainable alternatives are being developed, such as compostable and biodegradable plastics, and recycling and reuse programs are being stepped up.

2. Paper : Due to its cost, eco-friendliness, and adaptability, paper is an often used material for packaging. They are well-liked options for environmentally friendly packaging because they are easily recyclable and made from renewable resources. Paperboard is a smooth, firm material that is frequently used to package labels, cartons, and boxes. Customers choose it because it is easy to recycle and won't contribute to the global loss of forests if it is certified by the Forest Stewardship Council (FSC).

3. Glass :- Glass is a conventional packaging material that is renowned for its inertness, transparency, and capacity to maintain product flavour and quality. It is frequently used to package medicines, beverages, sauces, and cosmetics. Glass packaging presents products beautifully and lets customers see what's inside, which can be very alluring for high-end spirits or perfumes. Glass bottles are highly recommended for both alcoholic and non-alcoholic drinks since they are easy to recycle and offer protection against air,

moisture, and odor. In fact, most consumers choose glass above other materials in these categories. Glass containers are also quite attractive in the beauty sector since more customers are drawn to the high-end look. Glass packing, however, is brittle and heavy, which makes handling and transit more difficult.

4. Carton/ Cardboard:- As a result of the nationwide lockdowns, takeout demand and the need for single-use containers increased. The need to use less plastic has increased interest in cardboard and boxes. As a result, businesses searched for more environmentally friendly packaging solutions to fulfill these requests without adding to the amount of debris that might wind up in the ocean. Additionally, when compared to other packing materials, cartons have a reduced environmental impact. They are employed to safeguard goods, such as glass jars, that must be shielded during handling or transportation. Additionally, cardboard is relatively simple to preserve for future use and recycle.

5. Tins: Due to their strength and ability to withstand outside forces, steel cans are a superb choice for packing commodities that need to be highly protected, including aerosol products or canned goods. Metals are a sustainable packaging solution since they can be recycled indefinitely without losing quality. Nevertheless, the cost of producing metal packaging might be higher than that of other materials, and the manufacturing process has an impact on the environment due to energy usage and greenhouse gas emissions.

1.6 AIMS AND OBJECTIVE

The primary aim of this research is to comprehensively investigate and analyze how elements of packaging, nutritional claims and brand recognition collectively influence consumer buying behaviour. By examining these factors, the study intends to uncover the specific ways in which packaging attributes can shape consumer's decision making processes and ultimately impact their purchasing choices.

1) To determine the key elements of package design and its impact on consumer buying behaviour.

2) To analyze the role of nutrition information and label claims on consumer buying behaviour.

3) To identify the effect of packaging in enhancing brand recognition.

1.7 RESEARCH QUESTION

1) What are the key elements of package design and its impact on consumer buying behaviour?

2) What role does nutrition information and label claims play in consumer buying behaviour?

3) Does packaging of product enhances brand recognition?

1.8 STATEMENT OF PROBLEM

Consumer buying behaviour highly depends on packaging and labelling when buying food products. Different and attractive packaging helps consumers recognize a certain brand, which in turn increases sales. In fact, many researchers have significantly predicted a positive trend in connection with the appealing packages. In the present context of relatively similar consumer goods available in the market and the varied offers that consumers find at the point of sale, packaging and labelling are considered an effective tool in creating differentiation in the minds of

consumers (Ampuero & Vila, 2006).

The elements of packaging, which influence the most and help customers recognize the brand at first glance while buying products, will help producers and manufacturers get a brief idea of where to direct their costs and reduce on things that have no effect. Moreover, marketers use label information to mislead consumers by providing untrue information to exaggerate the attributes of their product. Labels that display nutrition information like low-fat, fat-free, cholesterol-free, and 100 percent pure juice are a few examples. In this backdrop, the present study has focused on the role of packaging and labelling in consumers' buying behaviour in Goa.

1.9 SCOPE OF STUDY

This study lays down the scope of finding the impact of packaging elements on consumer buying behaviour towards FMCG products in the state of Goa. With an increase in identical products on the market, this study will help us understand how packaging plays an important communication role in the selection of specific products. Thus, the study has focused on analysing the impact of packaging on consumer buying behaviour, consumers knowledge towards labelling, awareness towards nutrition information of the products, and examining whether attractive packaging helps enhance brand recognition.

1.10 RESEARCH GAP

This research has been conducted in the state of Goa. There are barely a few studies in the literature that have combined the aspects of all three in a comprehensive way that included key elements of packaging and nutrition claims influencing consumer buying behaviour and the effect of packaging on brand recognition. This is an important marketing problem, but research on such packaging issues is not very extensive. They can have a major impact on the success or failure of

brands in the market. This has resulted in eliciting the need for examining the role of packaging and identifying its key elements, whether or not today's consumers trust the claims made on packages, and whether the packaging of a product enhances brand recognition.

1.11 Chapterisation:-

The whole study has explained in 4 chapters

- Chapter I: This chapter deals Introduction, Objectives of the Study, Research Question, Scope of the study, Research Gap, Statement of the Problem,
- Chapter II: This chapter deals with past literature review, hypothesis development and conceptual model
- Chapter III : This chapter provides a brief idea about methodology used in the study i.e. Data collection and sample size, Questionnaire Structure.
- Chapter IV: This chapter deals with data analysis and interpretation of data by using different statistical tools and techniques, discussion and conclusion, limitations and future research, managerial implication.

Chapter 2: LITERATURE REVIEW

2.1Theoretical framework and hypotheses development

Due to various national and international companies and their wider range of products, customers are going through more than 25000 goods choices within a half hour shopping session (Kevin, 2008). Due to that it is very important for any business to attract the customers in a unique way. Packaging plays a very important role in it. Packaging has unique functions in marketing: It contains the product, protects it, promotes the product, recycling and helps to reduce the environmental damage. It helps the company by creating a unique position in the mind of the consumer (Lamb, 2011).

2.1.1 Key elements of package design and its impact :

According to Suzana Poslon et al. (2021), packaging appearance is important in evoking consumer impressions. To attract consumers' attention successfully, it is essential to influence their decisions by meeting their packaging needs (Haiying Wang et al., 2023). Sadique Hussain et al. (2015) tried to find out different packaging components that influence consumer perception and how effectively they guide marketers in order to gain customer loyalty. A successful marketing strategy usually depends on a firm's understanding of its customers, what they need, and how it persuades them to buy from it. (Ezenyilimba, Emma, et al., 2018). Laimona Sliburyte et al. (2014) revealed that colour perception influences decisions to buy, thus increasing the efficiency of marketing. Colour in product identifiers builds brand uniqueness, differentiates products, boosts competitive advantage, strengthens loyalty, drives sales up, shortens time until perception, prolongs time spent in the store, and increases intentions of repeat visits. Moreover, colour creates the illusion of having weight. Although there is no difference in the physical properties of white

and black, in the psychological sense, it can produce an illusion of nearly twice the weight difference in identical packages differing only in color. (He & Zhang, 2021). The most prominent packaging attributes, which contribute to the packaging appearance at first glance, are shape and material (Suzana Poslon et al., 2021). But according to Haiying Wang et al. (2023), image has the most significant influence on consumers's purchase decisions, and packaging material and technology have little impact on consumer behaviour; therefore, producers should decrease costs on this and increase costs on packaging appearance design.

According to the research of Bruce Mushili et al. (2024), with respect to milk packages, it was identified that the attributes of the milk package (packaging colour, image, material, wrapper, font style) are interdependent, and hence they must be improved as a whole and not designed in isolation. While the researcher also observed that the colour of a product's packaging is the most significant characteristic, but opposed to this research the study made by (Edim E.J. et.al, 2023) revealed that packaging colour had no significant effect on consumers with regard to milk packaging. Therefore, the study recommended that manufacturers of evaporated milk brands should pay little attention to packaging colour in their packaging design process because consumers' patronage of evaporated milk brands is influenced by more important factors than packaging colour, such as the design of the wrapper, quality of packaging material, and packaging information. Due to the common perception that packaging is an integral aspect of the product, packaging cues in marketing have an impact on how a product is perceived.

Consumers tend to infer how products taste from the product's outer packaging, and packaging attributes affect consumers' expectations of a product, as seen in the research conducted by (Nina Veflena 2022) were round shaped packaging combined with high colour brightness and low colour saturation communicates a mild taste, whereas triangular-shaped packaging combined with

low colour brightness and high saturation signals a sharper-tasting cheese. Multiple sensory elements of a product's packaging can enhance respondents' taste expectations and expected liking of a product. Packaging is not limited to the wrapping of a product. Rather, all the elements of packaging play a critical role in promoting consumer purchase intentions (Sidrah Waheed et al. 2018). Based on the literature, the following hypothesis is proposed:

H_o. There is no significant relationship between consumer buying behaviour and key elements of packaging.

H_1. There is a significant relationship between consumer buying behaviour and the key elements of packaging.

2.1.2 The role of nutrition information and label claims :

Packaging design is an important factor when consumers look out for healthy food (Alexandra Theben et al., 2020). Nutrition claims on a 'healthy' food lead to positive evaluations or an increase in purchases. The longer a participant looked (gaze time) at a certain claim, the more likely they were to purchase the respective product (Johann Steinhausera et al. 2019). Alexandra Theben et al. (2020) demonstrated in their research that colour influences perceptions of a product's healthfulness, whereby green labels increase perceived healthfulness, especially among consumers who place high importance on healthy eating. Whereas, according to Lei Huang & Ji Lu (2016) study, red packages are associated with a perception of less healthy content compared to blue packages. Additionally, the findings state that blue packages are perceived as healthier, especially for utilitarian food (bread, vegetables, etc.) compared to hedonic food (ice cream, candy, etc.), and can be viewed as an important extension to the food-colour research that focuses mainly on hedonic food. On the other hand, the expectation that one could eat more of the product

had the biggest effect for products that carried reduction claims that could suggest a lower energy intake for the consumer, which suggests that such claims could be related to compensatory beliefs (Poelman et al., 2013). The anticipated benefits associated with the choices revealed that products carrying a claim were generally expected to be healthier than the non-claimed product. Most studies have found that higher nutrition knowledge leads to lower preferences or purchase intentions for products with NHCs (Cavaliere et al., 2015; Walters & Long, 2012). Customers must be aware of the benefits offered by food products with health claims in order to make educated decisions about them (Jiangen Song et al., 2015).

Following the increasing importance of healthiness and sustainability for many consumers, manufacturers increasingly try to give products a healthier or eco-friendlier image, for instance through packaging design, which also implies that when it comes to influencing the opinions and decisions of teenagers and young adults about products, visual packaging cues may have greater persuasive power than informational cues (Lotte Hallez et al., 2022). According to Violeta Stancu et al. (2021), time is an important factor when consumers buy products related to nutritional claims, as consumers with “no time constraints” understand the health claims to a greater extent compared to those with “time constraints." Ulrich Hamm et al. (2010) underline that when a product is re-launched with a claim, the food supplier ought to accompany this change with special communication efforts in order to induce brand switching. But the difficult terminology, small font size, and inability to understand nutritional labels can have the opposite impact on consumers (Jiangen Song et al., 2015). Whereas Ivo A. van der Lans et al. (2006), by analysing four different countries, found that various benefits being claimed are perceived differently in different countries in terms of perceived newness and difficulty to understand.

Even though consumers care about food safety, only those who are truly interested in the topic will actively look for information (by reading nutrition facts tables, for example). The analysis reveals that the amount of information plays the most important role in consumer perceptions of healthiness. Although the value of nutritional labelling has been heavily scrutinised (Newman et al. 2014), this study finds that more text on the packaging is associated with greater healthiness, even when the additional words contain relatively little added health information. The results find verbal cues to be most important, with the amount of information provided being the key driver. Additionally, consumers who feel they are experts in the field tend to base fewer actual food decisions on their knowledge of food safety. Accordingly, this study examines if nutrition information and label claims have any influence on consumer buying behaviour. Therefore, we propose that:

Ho. There exists no significant association between nutrition information and label claims on consumer buying behaviour.

H2. There exist a significant association between nutrition information and label claims on consumer buying behaviour.

2.1.3 Effect of packaging in enhancing brand recognition:

Packaging today has become the vital tool to make the products "face in the crowd rather than face of the crowd." The right packaging can help a brand carve a unique position in the marketplace and in the minds of consumers (Arun Kumar Agariya et al. 2012). Packaging is an essential component of the branding process since it communicates a company's image and identity. Robert L. Underwood et al. (2002) also state that package pictures led to positive beliefs about brand taste, which in turn influenced brand evaluations. Some researchers identified six elements of

packaging, which include size of packaging, colour of packaging, text used on packaging, material of packaging, graphics used on packaging, and smell (Smith and Taylor, 2004). While others divided them into two categories, which are functionality packaging (easy to open, easy to consume, easy to carry) and packaging saleability (colour, design) (Teofilus et al., 2019). According to the research of Ahmed Abd ElGhany Hassan et al. (2018), there is a high relationship between brand strategy and the packaging design elements and between buying behaviour and packing visual elements (colour, background of packing font style, and packing innovation) as a branding factor. Communication through the brand is highly correlated with the shape of the package (Arun Kumar Agariya et al., 2012). While Underwood, Klein, and Burke (2001) found that designing packages with product images gained attention for brands, especially those that were less familiar and provided experiential benefits.

Appealing packaging not only makes a new product easier for customers to notice, but it also increases the likelihood that they will recognise the same product the next time, increasing the likelihood that they will make a repeat purchase, as stated by Mai Ngoc Khuong et al. (2016). Additionally, it also mentions that increasing repurchase intentions was primarily driven by improving brand recognition and brand recall. Sidrah Waheed et al. (2018) back up the idea that packaging is more than just wrapping a product. Instead, every component of the packaging is essential to encouraging the purchase intentions of the customer. Packaging reaches both available and potential consumers at the most essential stage, like decision-making, and satisfies the expectations of the consumers, such as “information seeking, ease of handling and usage, brand comparison, brand image and awareness, environment protection, health insurance, innovation opportunity, promotion, etc. (Selda Ene et al., 2016).

A study was conducted by Zeghache Nora (2014), and the purpose of this paper was to identify the effect of packaging colour (chromatic vs. achromatic) on children's brand name memorization (recall and recognition). The results showed that the chromatic colour of packaging has a positive impact on brand name recognition but not on recall. Furthermore, the age variable has a significant positive effect on recall capacity but not on brand name recognition. Children's importance as a commercial target is increasing, so marketing managers have to differentiate their products on the shelves. Consequently, the choice of the dominant packaging colour appears to be a crucial strategic decision because it allows children to recognise the brand name. According to Mahima Shukla et al. (2022), related pictures, information, colour, and visuals describe the brand's semiotics on product packaging. They create sensory impressions, make a personal connection, and encourage the buyer to think about the brand. The results present evidence of the growing influence of semiotic product packaging on consumer brand trust and purchase intentions. The study suggests that brand semiotics positively influence customer brand experience, brand trust, and purchase intention for FMCG products. Thus, we hypothesize that;

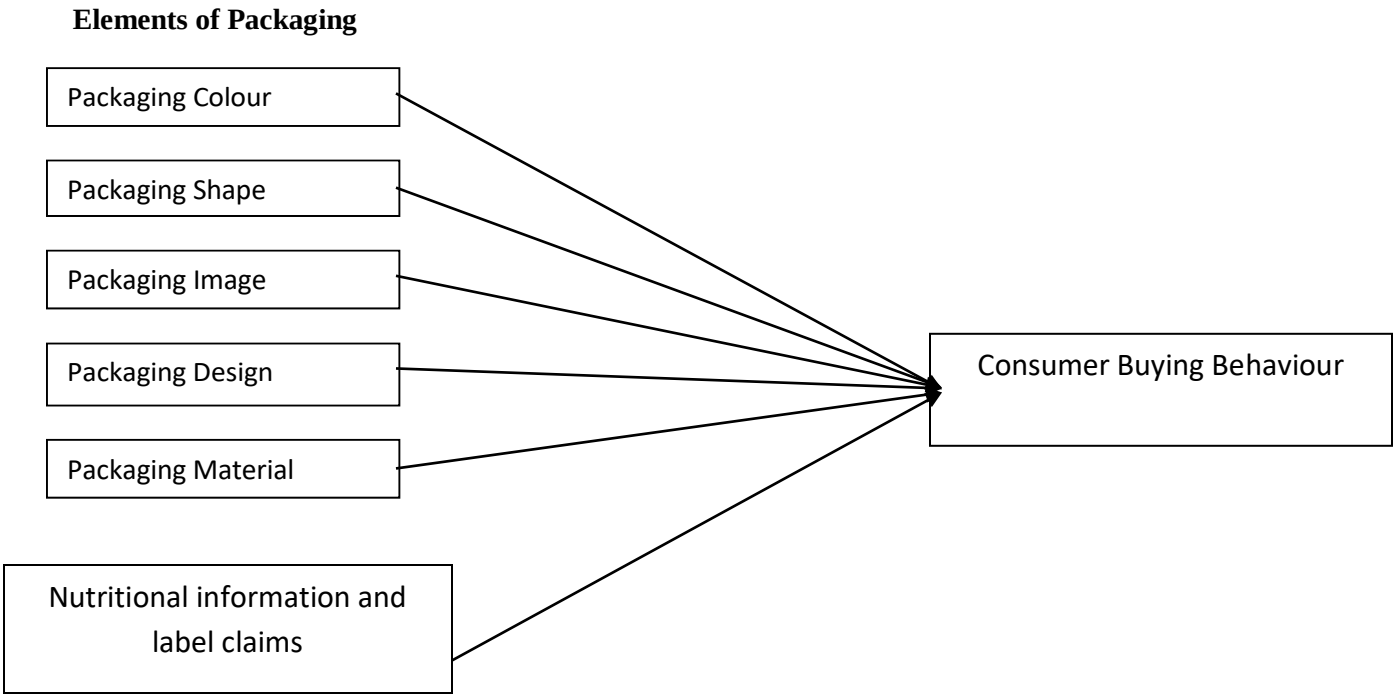
Ho. There is no significant impact of packaging on brand recognition.

H3. There is a significant impact of packaging on brand recognition.

2.2 Conceptual Model

Framework of this research shows several factors of packaging affecting consumer buying behaviour and brand recognition while purchasing the product. Such as packaging colour, image, design, materials, shape, nutritional information and label claims.

Fig. 1



Packaging Colour

Colour is used to convey various messages, as individuals identify colors with different emotions or sentiments. It has the capacity to elicit both positive and negative emotions and thoughts. Each colour has a distinct meaning and evokes a range of emotions in the minds of those who view it, such as black colour reflects authority and mystery, whereas, the green colour reflects ease. In addition, the red colour shows passion and strong traits while the green colour suggests affordability and casualness. The brown colour is a symbol of masculinity and the white colour symbolizes purity, refinement and formality (Aslam, 2006). Consumers often make a judgment on the quality and price of a product based on its packaging color (Becker et al. 2011). Colour is critical when consumers engage in low involvement decisions and can be used as a marketing tool for fast moving consumer goods (Lichtl´e, et al. 2007). Colour defines a product's identity, attracts attention to its attributes, and allows it to stand out among competitors in a cluttered retail environment.

Packaging Material

Packaging Material is important element which prevents the product from loss. It is the first characteristic of a product that comes in direct contact with the consumer. It also reflects the quality and image of a product. According to Underwood, Klien & Burke, (2001) when consumers see low quality packaging material they assume that the quality of the product will be low as well. Therefore, consumers tend to purchase products packaged with high quality materials. Furthermore sometimes marketers use those packaging material which can prevent the freshness of product under extremely high or extremely low temperature (Smith and Taylor, 2004).

Packaging Design

Packaging design includes the layout, fonts and colours used on a product. All these aspects of packaging design create a brand image and stimulates consumer purchase intentions (Grossman & Wisenblit, 1999). The design possessed by a package must be able to attract and convince consumers to buy the product (Farooq et al., 2015). Due to time constraints, many consumers purchase products impulsively and their purchasing behavior is influenced by the packaging design (Herrington & Capella, 1995). As consumers draw inferences about a product on the basis of packaging design, therefore, it must stand out in a display.

Packaging Shape

A product's perception is influenced by its shape, which makes it an essential component of branding and packaging design. The shape of both product and packaging can affect consumers' associations and sensory expectations towards a product, as well as their expected liking and their willingness to purchase the product (Ares & Deliza, 2010). Developing a good design requires an understanding of the psychology of shapes. Whereas circular designs suggest warmth and approachability, square shapes stand for balance and steadiness. Emotions, attitudes, and purchase behaviors can be influenced by packaging shape (Pantin & Sohier, 2009).

Packaging Image

Images impact emotions faster and more powerfully than words. Images can be a tool for identifying brand distinction, presenting the ultimate outcome of consuming the product, while communicating mental state of conceiving freshness. Consumers opinions of the brand are also impacted by the image portrayed (Schifferstein et al., 2021) and conduce greatly to attract consumers' attention (Zhou et al., 2021).

Nutrition Information and label Claims

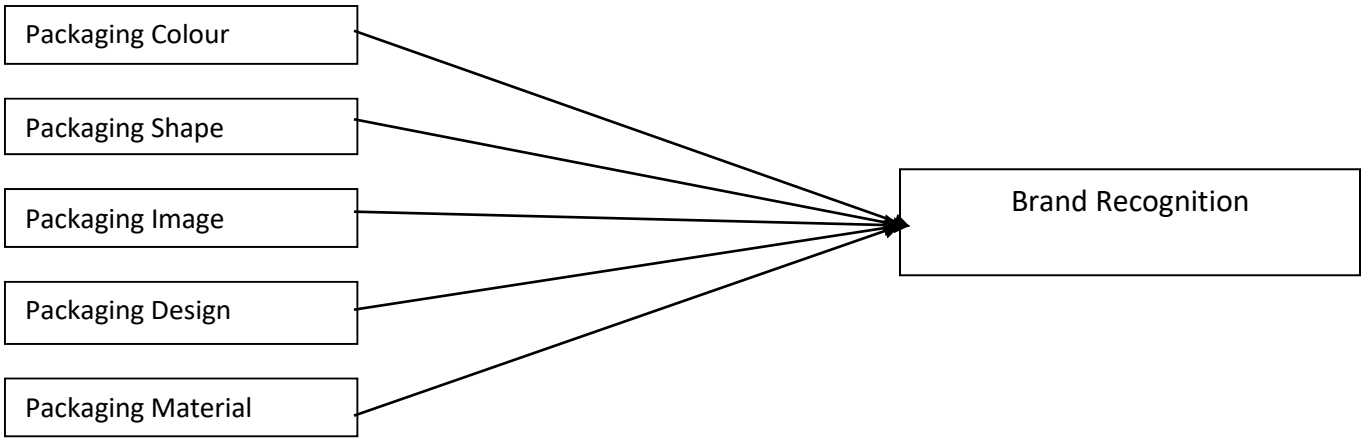
These claims are short phrases printed on the front of food packages indicating the nutritional and health related qualities of a food product which help consumer make informed choices about the food they purchase and consume. A study done by (Wills et al., 2009) on the consumer attitude towards nutrition information illustrates that nutrient information given on the packaging should be appropriate as it affect consumer food choices, because consumers base their decision on such information given on packaging due to their diet and lifestyle

Consumer Buying Behaviour

The buying behaviour of consumer is a complicated and rapidly changing affair which is very difficult to define. Engel, Blackwell and Miniard (1986) gave a definition of consumer buying behavior as some actions performed by an individual for obtaining, using and disposing economical goods and services including processes of decision making that comes before buying behaviour. The way that customers interact with the market is influenced by numerous psychological, sociological, and cultural factors. In short it is the consumer's attitudes, preferences, intention, and decisions regarding their behaviour in the marketplace when buying a product.

Fig. 2

Elements of Packaging



Independent Variables **Dependent Variable**

Brand Recognition

When a customer recognizes a product because it is different from them within a similar range of products, this is referred to as brand recognition. It is the ability of consumers to recognize and identify a specific brand. Beside, brand recognition can be triggered by packaging, colour, taglines etc. The ability of the consumer to recognise or associate a product with a brand is known as brand acknowledgment. Marketers create brand recognition by using a specific combination of colours and shapes to create a brand stamp (Beta, 2020)..

Chapter 3: METHODOLOGY

This cross-sectional study adopts quantitative research approach to understand the impact of elements of packaging on consumer buying behaviour and brand recognition as well as the role of nutritional information and label claims on consumer buying behaviour.

3.1 Data Collection and Sampling Techniques

Using a Google Form link, a self-administered structured questionnaire was created and disseminated via Purposive and Snowball sampling over different social media platforms. The data obtained from the survey was administered and cleaned before analysis. Jamovi software was used for descriptive statistics and Partial Least Square- Structural Equation Modelling though SmartPLS 4 statistical software package was used to analyse the model and its data. A pilot study was also carried out with 50 respondents to assess if the respondents understood the questions and to test the reliability of the questionnaire instruments. The sample size for the current study was determined according to the number of items *10= the total number of responses i.e. 37*10= 370 (Hinkin, T. R. 1998).

3.2 Questionnaire Structure

In order to validate the proposed model and examine the research hypothesis, a structured questionnaire was prepared. It comprised of two sections: The first section consist of demographic questions like Gender, Age, Qualifications, income etc, followed by screening questions about their buying behaviour while purchasing a product such as (packaging elements that appeal the most, priority while purchasing). The second partconsist of 37 scale items to measure the fundamental construct mentioned in the proposed model. As it can be seen in the proposed model, which has eight constructs, to measure each construct, statements were used. The 37 scale items

were modified to cater to the needs of the current study. A 5-point Likert's scale, ranging from 1 (strongly disagree) to 5 (strongly agree), was used to measure the items used in the questionnaire. The majority of the items were derived from existing instruments validated in past studies (Fuad Mohammed Alhamdi, 2019; S. Dharchana, 2020).

Chapter 4: DATA ANALYSIS

The statistical software package used for data analysis was Smart PLS Version 4.0, to analyze the results and test hypothesis. With this software, partial least square structural equation modeling models are its area of expertise. PLS is a widely used and effective statistical technique that may provide model parameters and path estimates in non-normal situations (Hulland J., 1999). It can also be applied to small to medium-sized datasets. PLS-SEM estimation is a versatile method for estimating structural equation (Sarstedt & Christian M. Ringle, 2017). The purpose of this study is considering SEM is that it is a robust and complex data analysis tool that looks at multiple variables at once. Similarly, SEM was employed in this research due to its ability to analyze the relationship between the variables and approximate random errors in the observed constructs directly in providing precise measurements of the questionnaire items and variables (Teo, 2019). Thus PLS-SEM provides two analyses which include assessment of measurement model (evaluation of reliability and validity of constructs) and assessment of structural model (checks relationship among model variable) (Hair et al., 2016).

4.1 Demographic Profile

A total of 383 responses were gathered. The purpose of the data cleaning procedure was to ensure that the data was reliable and consistent for the investigation. Accordingly, after cleaning the data a total of 370 responses were validated in jamovi. Table 1 reported the respondent's demographic profile.

Table 1:- Demographic Profile

Demographic Characteristic		Frequency	Percent
Gender	Male	131	35.5
	Female	239	64.5
Age	Upto 20	19	5.13
	21-30	289	78.13
	31-40	21	5.67
	41-50	16	4.32
	51-above	25	6.75
Education	Upto 10	8	2.16
	Upto 12	78	21.08
	Graduation	191	51.62
	Post Graduation	80	21.62
	Other	13	3.52
Income	Less than 1 lakh	128	34.59
	Rs. 1 lakhs-Rs. 3 lakhs	165	44.59
	Rs. 3 lakhs- 5 lakhs	36	9.72
	Rs. 5 lakhs- 10 lakhs	32	8.64
	More than Rs. 10 lakhs	9	2.43
Marital Status	Married	296	80
	Unmarried	74	20
Location	South Goa	192	51.89
	North Goa	178	48.11
Packaging elements that appeals the most	Colour	79	21.35
	Shape	20	5.40
	Design	69	18.64
	Image	30	8.10
	Material	172	46.48
Priority while purchasing the product	Protective Packaging	136	36.75
	Eco-Friendly Packaging	133	35.94
	Attractive Packaging	90	24.32
	Other	11	2.97

Note: N= 370

Based on the above table 1, it was seen that most of the respondents are female (n= 239; 64.5%) as compared to male respondents (n= 131; 35.5%). With respect to age, largest part of the sample was from the age group of 21-31 years (n= 289; 78.13%). It was noted that most of the respondents were having Bachelors Degree with (n= 191; 51.62%). With respect to income level majority of respondents was from between Rs. 1 lakhs- 3 lakhs (n= 165; 44.59%) & less than 1 lakh with (n= 128; 34.59%) categories. Next most of the respondents were unmarried (n= 296; 80%). The result further illustrates that the location of the respondents are almost equally distributed i.e (n= 192; 51.89%) South Goa and North Goa (n=178; 48.11%). With reference to the packaging elements that appeal the consumers most, it was found that majority of respondents (n= 172; 46.48%) considered packaging material while purchasing the product. Around (n= 136; 36.75%) respondents priority was of having a protective packaging while purchasing the product, whereas (n= 133; 35.94%) having an eco-friendly packaging and only (n= 90; 24.32%) respondents priority while buying the product was an attractive packaging.

4.2 Descriptive Statistics of Measurement Model

Table 2:- Descriptive Analysis

Items/Code	Mean	Standard deviation	Kurtosis	Skewness
CBB1	3.468	0.842	0.88	-0.676
CBB2	3.524	1	0.031	-0.449
CBB3	3.124	0.927	-0.277	-0.025
CBB4	2.957	1.039	-0.829	0.305
PC1	3.508	0.91	0.567	-0.618
PC2	2.876	1.195	-0.833	0.404
PC3	3.389	0.981	-0.078	-0.516
PC4	3.524	0.998	-0.091	-0.362
PS1	3.23	0.935	0.344	-0.493
PS2	3.886	0.955	0.693	-0.856
PS3	3.614	0.955	0.475	-0.728
PS4	3.576	0.91	0.283	-0.42
PM1	3.803	0.901	1.268	-1.024
PM2	3.992	0.923	1.394	-1.062
PM3	3.876	0.88	1.944	-1.023
PI1	3.657	0.86	1.783	-1.121
PI2	3.757	0.892	1.602	-0.973
PI3	3.168	0.927	-0.3	-0.319
PI4	3.265	0.944	-0.167	-0.3
PD1	3.57	0.913	1.474	-1.01
PD2	3.224	1.061	-0.785	0.074
PD3	3.503	0.806	1.242	-0.444
PD4	3.686	0.986	1.125	-0.97
NC1	3.854	1.027	0.359	-0.802
NC2	3.835	1.084	-0.233	-0.69
NC3	3.546	0.983	-0.16	-0.463
NC4	3.449	0.961	-0.044	-0.413
NC5	3.222	1.068	-0.513	-0.304
NC6	3.743	0.865	1.518	-0.863
NC7	3.786	0.892	0.98	-0.762
BR1	3.608	0.948	0.429	-0.696
BR2	3.316	0.984	0.079	-0.343
BR3	3.792	0.833	2.002	-0.972
BR4	3.17	1.086	-0.551	-0.139
BR5	3.495	0.849	1.029	-0.502

BR6	3.257	0.862	0.396	-0.674
BR7	3.524	0.835	1.159	-0.901

Source: result from primary data analysis

Results of descriptive analysis shown in table 2 indicate that the mean values of all items are ranked between 2.87 to 3.99 which are above the mid-point value of 2.5 which suggest that the respondents have given generally positive responses to all the items that are begin measured. Beside, STD deviation ranges from 0.806 to 1.195 which indicates a narrow spread between the mean indicating that the responses from the respondents are close, and not widely dispersed (Anthony et al., 2019). By analysing the values of Skewness and Kurtosis normality of data was checked. The values of the Skewness and Kurtosis for the items were between the suggested cutoff of 3.0 for Skewness and 8.0 for Kurtosis Teo (2019).

Furthermore, the reliability and validity were assessed, where reliability refers to the degree to which the variables give consistent results and are free from errors. Similarly, validity refers to the extend to which a variable differ from other variables in the same model in measuring what it supposed to measure (Yeou, 2016).

4.3 Results of Objective 1 & 2

The Structural Equation Modeling (SEM) has been applied in the current study, wherein first step is to assess measurement model validity and next step is to test the hypothesis. In the first stage, we evaluate how well the observed questionnaire items reflect the unobserved factors reported (T. Teo, 2019). Here the reliability and validity of the model will be assessed, where reliability refers to the consistency and accuracy of varied results. Where validity on the other hand is the degree to which one variable differs from other variables in the same model in assessing the intended outcome i.e. to measure what is supposed to measure (Yeou, 2016). The measurement model was validated for accuracy by examining the construct with convergent and discriminant validity, as well as the reliability of various item scale. The constructs reliability was confirmed by factor loading analysis, which revealed statistically significant values above the minimum permissible value of 0.7 for almost all of the items which is a clear indication that items are strongly related to their associated construct and are one indication of construct validity. Although for 3 items i.e. CBB 4, PD 2, PI 4 the loading were below 0.7 but they were within the range of 0.6 to 0.7 which exceeds the minimum threshold of 0.4 as it is recommended by (Lin & Wang, 2012). Table 3 indicates the factor loading of all items. Cronbach Alpha (CA), Composite Reliability (CR) and Average Variance Extracted (AVE) were used to test the construct reliability and validity. Reliability indications indicate that Cronbach Alpha (CA), Composite Reliability (CR) and Average Variance Extracted (AVE) critical values should exceed 0.7 and 0.5, respectively (Fornell and Larcker, 1981).

Table 3: Loading, Cronbach Alpha, Composite Reliability, Average Variance Extracted

	Loading	CA	CR	AVE
Consumer Buying Behaviour		**0.789**	**0.864**	**0.615**
Attractive packaging is prime reason to buy a particular product	0.817			
When the packaging of the product appeals, I feel a strong urge to purchase it	0.867			
If I have less time, I will consider packaging has the bases for purchasing the product	0.784			
Will you switch to new brand due to change in packaging of existing brand	0.654			
Nutritional Claims		**0.882**	**0.913**	**0.677**
I always read the information and nutritional claims provided on the product	0.803			
I buy products based on the information and claims provided on it.	0.831			
I fully trust the information provided and nutritional claims made on the products.	0.774			
Packaging that communicates the nutritional benefits of a product is more appealing to me.	0.833			
Packaging that highlights nutritional claims makes me perceive the product as higher quality.	0.869			
Packaging Colour		**0.808**	**0.874**	**0.635**
The colour of the package of a product attracts my attention towards it.	0.782			
Ready to buy product with an attractive colour even if the cost is little higher than the random colour product.	0.767			
Changing colour of the packages is something essential that motivates you to buy.	0.764			
More likely to purchase a product if the colour of the packaging aligns with the product's intended use or purpose.	0.870			
Packaging Design		**0.827**	**0.887**	**0.664**
The technical aspects of the packaging design attract your attention to the product	0.871			
The design of the packaging is not important in attracting your attention to the product	0.658			
The packaging design attracts your attention to varying degrees depending on the nature of the product	0.862			
The packaging design gives enough information to identify the components of the product.	0.849			
Packaging Image		**0.806**	**0.871**	**0.63**
Packaging with attractive and visually appealing images	0.847			

makes me more likely to purchase a product				
I am more likely to trust a product if the packaging image represents the product accurately	0.832			
Packaging with cartoon characters makes a product more attractive and appealing to me	0.793			
Image on the outer packaging misleads me about the product's size, colour, pattern etc.	0.694			
Packaging Material		**0.852**	**0.91**	**0.772**
Quality of the packaging material is important to me during buying process	0.901			
I am more likely to buy a product if the packaging is made from eco-friendly material.	0.859			
While choosing the product I consider the packaging material as an important factor as it protects the product.	0.875			
Packaging Shape		**0.806**	**0.871**	**0.628**
I prefer the product having attractive shape	0.814			
Packaging shape can help differentiate a product from its competitors and make it stand out on the shelf	0.870			
I prefer simple shape rather than complicated one	0.730			
The possibility that I can benefit from the shape of the packaging by using it for other purpose.	0.749			

Source: Authors own compilation from primary data

From Table 3 it was clearly seen that all the values of Cronbach Alpha and Composite Reliability were above 0.70 which states that it has a good reliability and internal consistency for all constructs (Churchill, 1979; Fornell and Larcker, 1981). The Average Variance Extracted (AVE) scores for each construct are also displayed in Table 3, demonstrating that every value is higher than the preferred cutoff point of 0.50 (Fornell and Larcker, 1981). Therefore it is advised for confirmatory analysis because the Composite Reliabilities and Cronbach Alpha coefficients are higher than the minimally acceptable standards of 0.70.

Discriminant validity

Table 4: Discriminant validity

	CBB	NC	PC	PD	PI	PM	PS
CBB	**0.784**						
NC	0.537	**0.823**					
PC	0.685	0.596	**0.797**				
PD	0.53	0.81	0.62	**0.815**			
PI	0.683	0.622	0.518	0.574	**0.793**		
PM	0.562	0.657	0.57	0.665	0.538	**0.878**	
PS	0.62	0.713	0.63	0.692	0.766	0.687	**0.793**

**Bold value indicates the square root of AVE of each construct*

Discriminant validity is the extent to which individual items represents one latent construct and each construct is distinct from other constructs. In this regard (Hair et al., 2016) mentioned that the correlations between items in two variables should not be higher than the square root of the mean variance shared by a variable's items. To assess for discriminant validity, the Fornell and Larcker (1981) test was employed, where this test checks if the square root of AVE of each variable exceeds the correlation shared between the variables and other variables in the model. Results from Table 4 indicate that all variables acceptably higher than 0.50 and the square root of the AVE are larger than the cross-correlations with other variables.

Variance Inflation Factor

Table 5:- Variance Inflation Factor

Hypothesis Path	VIF
NC -> CBB	3.496
PC -> CBB	1.907
PD -> CBB	3.42
PI -> CBB	2.497
PM -> CBB	2.265
PS -> CBB	3.798

In a model, the Variance Inflation Factor (VIF) shows if multi-collinearity problems exist or not. With the exception of NC -> CBB, PD -> CBB, and PS -> CBB, all other values are below 3.33 and in line with the guidelines recommended by Hair et al. (2017). Despite, the VIF values of NC-> CBB, PD -> CBB, and PS -> CBB are higher than 3.3 but less than 5, indicating that there isn't a multi-collinearity issue as per (Diamantopoulos & Siguaw, 2006; Hair et al., 2019). As a result, we can say that the model has no problem with multi-collinearity.

Hypothesis Testing

After establishing the adequate reliability and validity of factors in the proposed model, the next step involves testing the structural model to confirm the relationships among the variables (Teo, 2019). Accordingly, the model hypotheses are tested by deploying PLS algorithm in SmartPLS 4.0 based on bootstrap re-sampling performed to examine the path significance levels of each hypothesis. Results from Table 5 depicts the hypotheses testing, where statistical significance of each hypothesis was assessed based on a two-tail test (***). Additionally, the structural model assessment is measured by examining the path coefficients value (β) which evaluates the relationship between variables based on their degree of significant levels (p value) <0.05 and t-value greater than 1.96 is required (Hair, J.F., 2016). Moreover, the coefficient of determination

termed R^2 value is used to measure the predictive significance of the model hypotheses. (R^2) is the proportion of the dependent variables explained by the influencing variables. The squared correlation values of 0.75, 0.50, and 0.25 in PLS path models are considered substantial, moderate, weak, respectively (Hair et al., 2019).

Table 6: Testing of Hypothesis

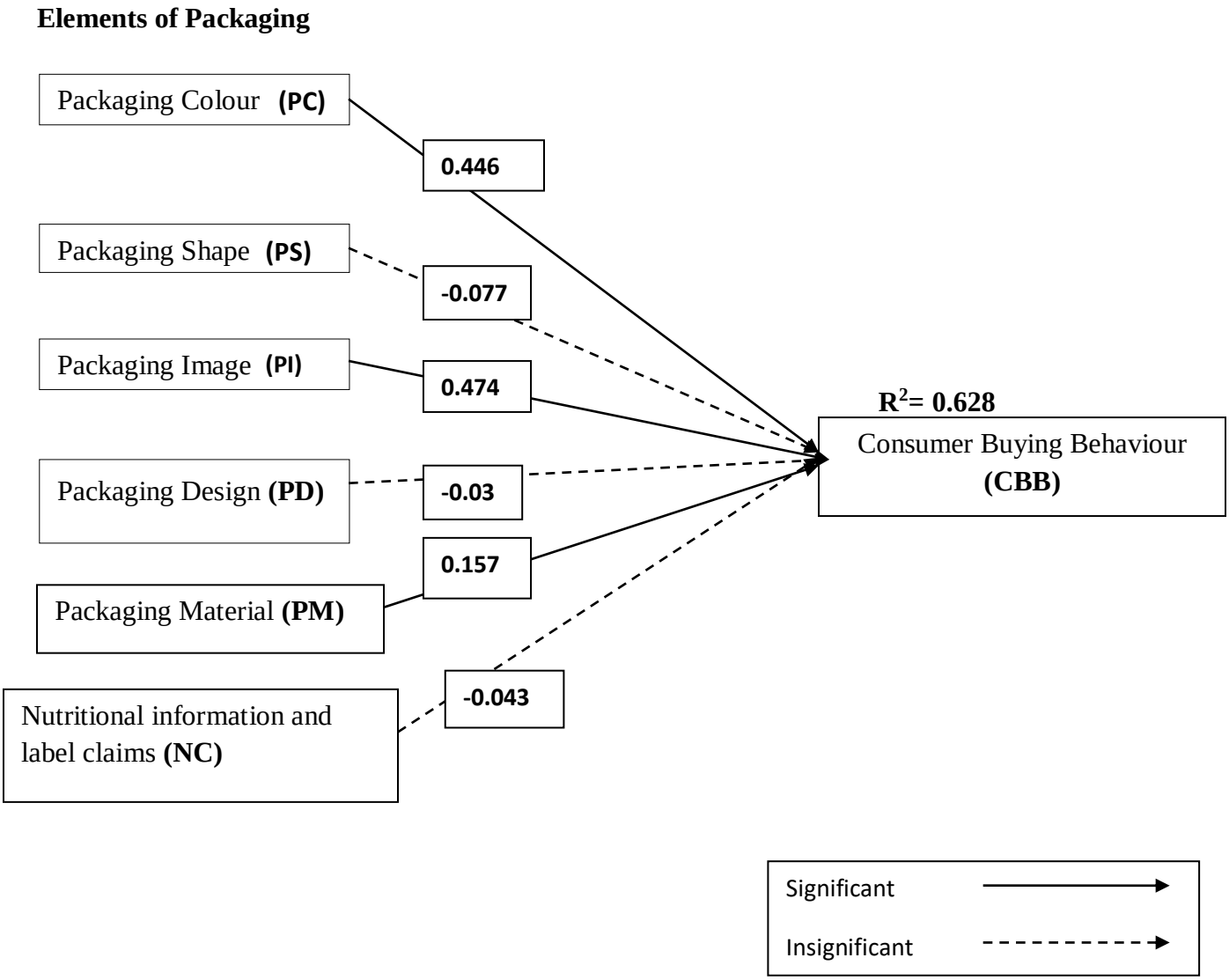
Relation	Path coefficient	STDEV	t-statistics	p-values	Hypothesis status	R-square	Q^2 predict
NC -> CBB	-0.043	0.05	0.863	0.388	Not Significant	0.628	0.612
PC -> CBB	0.446	0.055	8.037	0.000	**Significant**		
PD -> CBB	-0.035	0.061	0.565	0.572	Not Significant		
PI -> CBB	0.474	0.064	7.41	0.000	**Significant**		
PM -> CBB	0.157	0.051	3.067	0.002	**Significant**		
PS -> CBB	-0.077	0.067	1.147	0.251	Not Significant		

**Significant if t-value = > 1.96 and p-value = < 0.05*

Table 6 display the results of hypotheses testing using a two-tailed t-test with a significance level of 5% (0.05). H_1 is accepted as t- statistics of Packaging Colour, Packaging Image, Packaging Material is greater than 1.96 and p-value is less than 0.05, since out of five key elements of packaging three were significant therefore we can say that there is a positive relationship between key elements of packaging and consumer buying behavior. Whereas H_2 is rejected as the t-statistics and p-value of NC was not in the acceptable range as a result nutritional information and label claims does not have significant impact on consumer buying behavior. Moreover, the coefficient of determination termed R^2 was calculated. R^2 explains how changes in the independent variables affect the dependent variable. The R^2 value shows how much of the variance in the

dependent variable can be accounted for by the independent variables (Hair et al., 2014). The squared correlation values of 0.75, 0.50, and 0.25 in PLS path models are considered substantial, moderate, and weak respectively (Hair et al., 2019). The above table shows the assessed R^2 value of consumer buying behavior i.e. 0.628 which signifies it as moderate and R- square adjusted was reported as 0.622. As a result, it was feasible to confirm that the model meets the explanatory criteria by using the R^2 value. Further the examination of endogenous predictive power has good R^2 value. . Further the examination of endogenous predictive power has good R^2 value. Next after assessing R^2 i.e explanatory power of the model then t following criteria was used to assess the predictive relevance of the current model (Hair,Hult, et al., 2013). In order to have meaningful results predictive relevance i.e Q^2 value should be greater than 0 (Hair et al., 2019). The PLS path model's small, medium, large predictive accuracy are represented by values greater than 0, 0.25, 0.50 (Hair et al., 2019). Table 10 demonstrate that the Q2 value for Consumer buying behaviour is more than zero, at 0.612 respectively. Consequently, the predictive relevance of the research model is large. Which states that current model has satisfactory predictive relevance.

Fig 3: Result of testing the model



4.5 Results Objective 3

Similar method has been used for finding the results of 3 objective i.e. Structural Equation Modeling (SEM), wherein first step is to assess measurement model validity and next step is to test the hypothesis. The constructs reliability was confirmed by factor loading analysis, which revealed statistically significant values above the minimum permissible value of 0.7 for almost all of the items which is a clear indication that items are strongly related to their associated construct and are one indication of construct validity. Although for 3 items i.e. BR 2, BR 4, PD 2, the loading were below 0.7 but they were within the range of 0.6 to 0.7 which exceeds the minimum threshold of 0.4 as it is recommended by (Lin & Wang, 2012). Table 7 indicates the factor loading of all items. Cronbach Alpha (CA), Composite Reliability (CR) and Average Variance Extracted (AVE) were used to test the construct reliability and validity. Reliability indications indicate that Cronbach Alpha (CA), Composite Reliability (CR) and Average Variance Extracted (AVE) critical values should exceed 0.7 and 0.5, respectively (Fornell and Larcker, 1981).

Table 7: Loading, Cronbach Alpha, Composite Reliability, Average Variance Extracted

	Loading	**CA**	**CR**	**AVE**
Brand Recognition		**0.874**	**0.903**	**0.573**
Among several similar products available on the shelf I recognize a new brand based on its packaging	0.705			
I purchase a product of a brand because of the attractive packaging it has.	0.673			
I believe that packaging plays a role in creating a positive first impression of a product and its brand.	0.783			
I will recommend a product to others base on its packaging.	0.689			
The packaging of a product affects my perception of its quality and brand of the product.	0.870			
I like to try a new product based on its attractive packaging leaving my regularly purchasing product.	0.767			
While buying an unfamiliar brand its packaging helps me	0.793			

in making purchase decisions				
Packaging Colour		**0.808**	**0.874**	**0.636**
The colour of the package of a product attracts my attention towards it.	0.781			
Ready to buy product with an attractive colour even if the cost is little higher than the random colour product.	0.706			
Changing colour of the packages is something essential that motivates you to buy.	0.817			
More likely to purchase a product if the colour of the packaging aligns with the product's intended use or purpose.	0.878			
Packaging Design		**0.827**	**0.886**	**0.663**
The technical aspects of the packaging design attract your attention to the product	0.849			
The design of the packaging is not important in attracting your attention to the product	0.641			
The packaging design attracts your attention to varying degrees depending on the nature of the product	0.889			
The packaging design gives enough information to identify the components of the product.	0.854			
Packaging Image		**0.806**	**0.873**	**0.632**
Packaging with attractive and visually appealing images makes me more likely to purchase a product	0.833			
I am more likely to trust a product if the packaging image represents the product accurately	0.826			
Packaging with cartoon characters makes a product more attractive and appealing to me	0.783			
Image on the outer packaging misleads me about the product's size, colour, pattern etc.	0.735			
Packaging Material		**0.852**	**0.91**	**0.771**
Quality of the packaging material is important to me during buying process	0.905			
I am more likely to buy a product if the packaging is made from eco-friendly material.	0.835			
While choosing the product I consider the packaging material as an important factor as it protects the product.	0.893			
Packaging Shape		**0.806**	**0.872**	**0.631**
I prefer the product having attractive shape	0.757			
Packaging shape can help differentiate a product from its competitors and make it stand out on the shelf	0.885			
I prefer simple shape rather than complicated one	0.735			
The possibility that I can benefit from the shape of the packaging by using it for other purpose.	0.792			

Source: Author's own compilation from primary data

From Table 7 it was clearly seen that all the values of Cronbach Alpha and Composite Reliability were above 0.70 which states that it has a good reliability and internal consistency for all constructs (Churchill, 1979; Fornell and Larcker, 1981). The Average Variance Extracted (AVE) scores for each construct are also displayed in Table 7, demonstrating that every value is higher than the preferred cutoff point of 0.50 (Fornell and Larcker, 1981).

Discriminant validity

Table 8: Discriminant validity

	BR	PC	PD	PI	PM	PS
BR	**0.757**					
PC	0.66	**0.798**				
PD	0.728	0.643	**0.814**			
PI	0.698	0.519	0.591	**0.795**		
PM	0.617	0.59	0.659	0.528	**0.878**	
PS	0.658	0.647	0.712	0.76	0.683	**0.794**

**Bold value indicates the square root of AVE of each construct*

Discriminant validity is the extent to which individual items represents one latent construct and each construct is distinct from other constructs. To assess for discriminant validity, the Fornell and Larcker (1981) test was employed, where this test checks if the square root of AVE of each variable exceeds the correlation shared between the variables and other variables in the model. Results from Table 8 indicate that all variables acceptably higher than 0.50 and the square root of the AVE are larger than the cross-correlations with other variables.

Variance Inflation Factor

Table 9: Variance Inflation Factor

Hypothesis Path	VIF
PC -> BR	2.006
PD -> BR	2.499
PI -> BR	2.402
PM -> BR	2.178
PS -> BR	3.759

In a model, the Variance Inflation Factor (VIF) shows if multi-collinearity problems exist or not. With the exception of PS -> BR, all other values are below 3.33 and in line with the guidelines recommended by Hair et al. (2017). Despite, the VIF values of NC PS -> BR are higher than 3.3 but less than 5, indicating that there isn't a multi-collinearity issue as per (Diamantopoulos & Siguaw, 2006; Hair et al., 2019). As a result, it can be said that the model has no problems with multi-collinearity.

Hypothesis Testing

After establishing the adequate reliability and validity of factors in the proposed model, the next step involves testing the structural model to confirm the relationships among the variables (Teo, 2019). Accordingly, the model hypotheses are tested by deploying PLS algorithm in SmartPLS 4.0 based on bootstrap re-sampling performed to examine the path significance levels of each hypothesis. Results from Table 10 depicts the hypotheses testing, where statistical significance of each hypothesis was assessed based on a two-tail test (***). Additionally, the structural model assessment is measured by examining the path coefficients value (β) which evaluates the relationship between variables based on their degree of significant levels (p value) <0.05 and t-value greater than 1.96 is required (Hair, J.F., 2016). Moreover, the coefficient of determination

termed R^2 value is used to measure the predictive significance of the model hypotheses. (R^2) is the proportion of the dependent variables explained by the influencing variables. The squared correlation values of 0.75, 0.50, and 0.25 in PLS path models are considered substantial, moderate, weak, respectively (Hair et al., 2019).

Table 10: Testing of Hypothesis

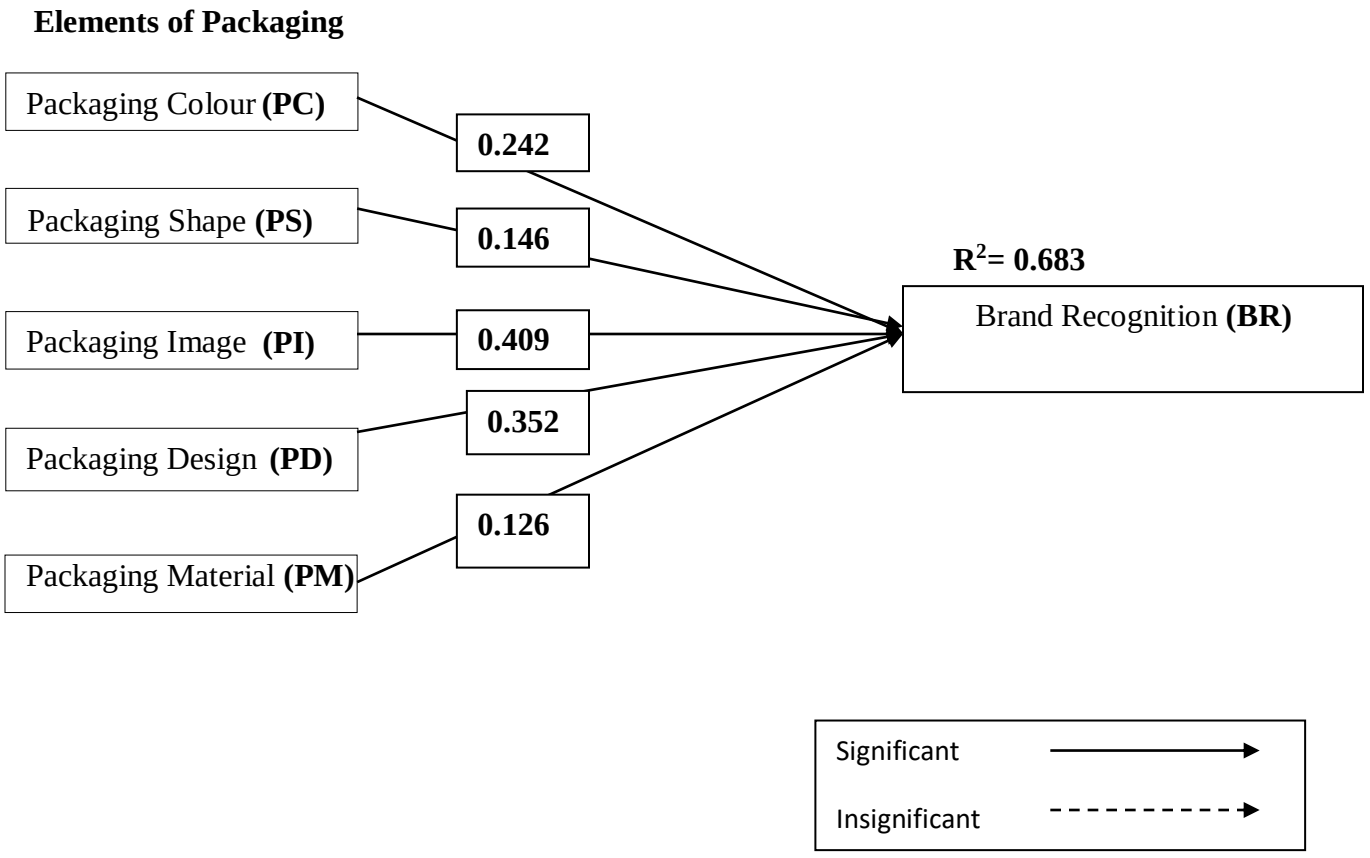
Relation	Path coefficient	STDEV	t-statistics	p-values	Hypothesis status	R-square	Q^2 predict
PC -> BR	0.242	0.042	5.787	0.000	**Significant**	0.683	0.671
PD -> BR	0.352	0.055	6.422	0.000	**Significant**		
PI -> BR	0.409	0.06	6.839	0.000	**Significant**		
PM -> BR	0.126	0.051	2.458	0.014	**Significant**		
PS -> BR	-0.146	0.067	2.173	0.03	**Significant**		

**Significant if t-value = > 1.96 and p-value = < 0.05*

Table 10 display the results of hypotheses testing using a two-tailed t-test with a significance level of 5% (0.05). H3 is accepted as t- statistics of Packaging Colour, Packaging Design, Packaging Image, Packaging Material, Packaging Shape is greater than 1.96 and p-value is less than 0.05, since all five key elements of packaging were significant therefore we can say that there is a positive impact between key elements of packaging and Brand Recognition. Moreover, Coefficient of determination (R2) was calculated which is the proportion of the dependent variables explained by the influencing variables. The R^2 value shows how much of the variance in the dependent variable can be accounted for by the independent variables (Hair et al., 2014). The squared correlation values of 0.75, 0.50, and 0.25 in PLS path models are considered substantial, moderate, and weak respectively (Hair et al., 2019). The above table 10 shows the assessed R^2 value of brand recognition i.e. 0.683 which signifies it as moderate and R-square adjusted resulted

as 0.679. As a result, it was feasible to confirm that the model meets the explanatory criteria by using the R^2 value. Further the examination of endogenous predictive power has good R^2 value. Next after assessing R^2 i.e. explanatory power of the model then the following criteria was used to assess the predictive relevance of the current model (Hair, Hult, et al., 2013). In order to have meaningful results predictive relevance i.e. Q^2 value should be greater than 0 (Hair et al., 2019). The PLS path model's small, medium, large predictive accuracy are represented by values greater than 0, 0.25, 0.50 (Hair et al., 2019). Table 10 demonstrate that the Q^2 value for brand recognition is more than zero, at 0.671 respectively. Consequently, the predictive relevance of the research model is large. Which states that current model has satisfactory predictive relevance.

Fig 4: Result of testing the model



4.5 Discussion and Conclusion

The goal of this study was to gain a better understanding of how packaging, as an extrinsic signal, influences consumer buying behaviour with respect to FMCG products. Moreover, this study focused on the influence of elements of packaging on nutritional information and label claims and brand recognition. Data was collected through online Google form and analyzed using PLS-SEM. The results showed that elements of packaging positively influences consumer buying behavior. This result consistent with finding from prior studies (Chiang and Yu 2010; Bruce Mushili et.al 2024; Haiying Wang et.al 2023) where the authors stated that, effective packaging is an important consideration for all marketing units, as it can contribute to a product's failure in the marketplace. Most consumers like the product quality after they purchased their desired packaged products. Based on those facts, we cannot say there is a 100% equal relationship between good package and good product quality, but there is a positive thinking and trend about well-designed package shows high product quality (Haiying Wang et. al 2023). However, some aspects of packaging, such as shape and design, were not the main factor in packaging elements, because they were not significantly impacting consumers' choices. As a result, instead of spending money on ineffective strategies like "buy two, get one free" or "10% extra," we can recommend that instead. This way, customers won't be convinced—they might assume that the free offer is because the quality isn't that great or that the package has only been increased but not the quantity in it. As an outcome of this, producers should reduce expenses in these areas while intensifying their attempts to develop novel packaging components that influence consumers' purchase decisions.

On the other hand, the results indicated a negative relationship between nutritional information and label claims and consumer buying behaviour. This result consistent with finding from prior studies (Muhammad Faisal Sultan et.al 2016). However, this finding was unexpected, because

modern consumers are highly conscious of their diets and overall health. A plausible explanation for this outcome could be because people tend to draw conclusions from what they already know; therefore it can be challenging to avoid misinterpreting the benefits of items that make promises. Consider a product featuring a ‘low fat’ claim that is also high in sugar content such as a low fat fruit yogurt. Will consumers mistakenly infer reduced sugar content based on the ‘low fat’ claim alone? If so, this would pose a challenge to nutrition claim regulation, because the ‘low fat’ claim would be both objectively correct and subjectively misleading at the same time. (Steffen Jahna et.al 2023). It might be more beneficial to make an effort to enlighten consumers about products, diets, and nutrition in general rather than relying solely on consumers to interpret health claims on individual products correctly when making decisions. Additionally two statements from nutritional information and label claims were eliminated from the questionnaire since its values of factor loading and discriminant validity exceeded its permissible bounds.

The right packaging can help a brand carve out a unique position in the marketplace and in the minds of consumers. Packaging has a better reach than advertising does and can set a brand apart from its competitors. It promotes and reinforces the purchase decision not only at the point of purchase but also every time the product is used. Furthermore the result states that all elements of packaging positively influences brand recognition. Therefore, it is suggested that focus shouldn't be made on only one or two elements but on the whole package. The current research shows that elements of packaging play an important role in attracting consumers towards the product and increasing brand recognition. This works when the product is not known to the consumer, but they are attracted by the packaging, which leads to brand recognition. Packaging can even drive the brand choice (especially in the context of children’s products).

Here is a real-world example of how a poor packaging decision may cause a product to fail on the market: Tropicana is one of the most well-known instances of what can go wrong with new packaging design. In 2009, this iconic juice brand introduced a more modern look, which only lasted two months on the market. During this time, sales dropped 20%, prompting executives to drop the new look fast. This packaging design is notable because of its brief time on store shelves. The original CPG packaging was comprised of rich colors and had a premium feel. The new design used clean lines and lacked the visual appeal of the previous packaging. The Tropicana logo was displayed on the side of the packaging in a different font than before, making it difficult to read. The product became less distinguishable, resulting in a switch back to the previous packaging.

4.6 Theoretical Contributions

The present study bridges a knowledge void on the impact of packaging on customer purchasing decisions. Beyond only keeping the goods safe, packaging is essential for drawing the customer's attention and making a good first impression. Additionally research with respect to nutritional claims was examined how these claims affect consumer attitudes towards FMCG product, their perceived healthiness, how consumer interpret and evaluate these claims and their willingness to make a purchase. This knowledge can help guide policymakers and marketers in developing regulations and guidelines for accurate and transparent nutritional information and label claims on packaging. Brand recognition is further enhanced by particular packaging components including colour, shape, material, image, and design. It becomes clear from examining how these components interact with consumer memory and perception that packaging affects a consumer's capacity to recognise and remember a brand.

4.7 Managerial Implication

According to the current scenario, Marketing managers have to figure out how to set their products apart from those of their rivals because of the increased level of competition. Inadequate packaging is one of the reasons why products fail on the market, so it is imperative that all marketing departments focus on how products are packaged. Setting norms for packaging can help build strong brands and also prolong the product life cycle. Consequently, colour appears to be crucial because it attracts the eyes of the consumer and allows to recognize the product and the brand due to its packaging. For instance, “green” prompts ideas of recycling, the environment, while “blue” reminds people of the sky, the ocean, and peacefulness. However, choosing a colour that is not associated with the category could have more drawbacks than benefits. A better packaging image enhances brand image. As a result, marketers can impress consumers with the brand by vigorously promoting its image. For instance, the friendly image of Parle-G Girl gives people a warm and reliable impression. Due to the fact that packaging material influences consumers buying decisions, there is need for packaging companies to be using a three-layer fabric composite for packaging. It is imperative for companies to incorporate packaging elements into their product design phrase in order to influence positive customers buying behaviour. This study demonstrated that, effective packaging elements can strengthen customer communication and increase the likelihood of consumer contact and commitment to the brand. This study also suggests that packaging shape and design have no influence on consumers’ behavior. Therefore, packaging producers should decrease the cost of shape and design and increase the cost of packaging appearance of other elements. The findings of this study confirm that there is a negative relationship between nutritional information & label claims and consumer buying behaviour, but as consumers become more knowledgeable about their health and diet, we will definitely see a

positive relationship between them. Most of the consumers may not have enough time while making purchases to read the information or claims made on the items, as it may take them a long time to understand the claims due to the unfamiliar terminology. It could be more beneficial to make an effort to enlighten consumers about products, diets, and nutrition rather than relying solely on consumers to interpret health claims on individual products correctly when making decisions. Brand purchases are being made or broken in the final five seconds'. So it is very important to decide which attributes of packaging needs to be highlighted and which needs to be downplayed.

4.8 Limitations and Further Research

This study has some limitations. First, the result from this study is from the state of Goa with respect to FMCG products, thus generalizability of the results to other state or countries should be treated with cautious. Secondly, there were five elements of packaging that were discussed in this study, leaving out a few others, such as size, typography, font style, graphics etc. Thirdly, respondents may have interpreted or answered the questions in a different manner since only the names of FMCG products were listed on the questionnaire and not truly displayed the products to them. Fourth limitation of the study was with respect to data distribution, the sample description showed that the largest sample of the respondents in current study were youngsters, having graduation degree, most of them from female category. Hence having normal distribution of data over different characteristics would have generalized the results.

Therefore, future studies could be conducted in other regions and across different fields (e.g., cosmetics, milk products, and electric products). Additionally other variables can be included to enhance the predictive significance in explaining the impact of packaging on consumer buying

behaviour. Further instead of just stating the product names ‘one’ can show picture of the product or have a personal interview with the respondent by showing them the actual real product while conducting the survey. Also research can be made on whether packaging influences socio-demographic factors or not. Specific claims can also be studied in order to understand consumers perception towards it. Moreover, this study did not relate to the consumer satisfaction survey and other needs investigation, such as function and structure. Finally, repurchase intention base on the packaging and nutritional claims can also be studied further. Future research may survey the use experience of consumers and consumer expectations.

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Appendix I: QUESTIONNAIRE

As a part of my Dissertation work in the M.Com Course, I am surveying **'Impact of Packaging on Consumer Buying Behaviour towards FMCG Products in the state of Goa.'** Please do co-operate with me in this survey by giving your responses. I promise that your responses will be kept confidential and will be used only for study purposes.

PART I: DEMOGRAPHIC PROFILE

Gender	Male			Female		
Age	Up to 20	21-30	31-40	41-50		51- above
Education	Up to 10^{th}	Up to 12^{th}	Graduation	Post Graduation		Other
Marital Status	Married			Unmarried		
Family Annual Income	Less than Rs. 1lakh	Rs.1 lakh– 3 lakhs		Rs. 3 lakhs-5 lakhs	Rs. 5 lakhs-10 lakhs	More than Rs. 10 lakhs
Location	North Goa			South Goa		

How often do you go to buy products at retail shop?

- Regularly
- Occasionally
- Not at all

Which of the following packaging elements appeals you the most?

- Colour
- Shape
- Design
- Image
- Material

What is your priority while purchasing the product?

- Protective Packaging
- Eco-Friendly Packaging
- Attractive Packaging
- Other ____

Section A

Which of the elements of packaging that are (**Colour, Shape, Material, Image, Design**) in FMCG products for example (**Biscuits, Chips, Softdrinks, Juices , Chocolate, Fruit Yogurt and such other products**) influences you to buy the product.

Kindly select the appropriate number ranging from 1 to 5 in each of the factors provided where:-

(1-Strongly Disagree, 2 Disagree, 3- Neutral, 4- Agree, 5-Strongly Agree)

	Consumer Buying Behavior	**1**	**2**	**3**	**4**	**5**
1	Attractive packaging is prime reason to buy a particular product					
2	When the packaging of the product appeals, I feel a strong urge to purchase it					
3	If I have less time, I will consider packaging has the bases for purchasing the product					
4	Will you switch to new brand due to change in packaging of existing brand					
	Packaging Colour	**1**	**2**	**3**	**4**	**5**
1	The colour of the package of a product attracts my attention towards it.					
2	I am ready to buy product with an attractive colour even if the cost is little higher than the random colour product.					
3	Changing colour of the packages is something essential that motivates you to buy.					
4	I am more likely to purchase a product if the colour of the packaging aligns with the product's intended use or purpose.					

	Packaging Shape	**1**	**2**	**3**	**4**	**5**
1	I prefer the product having attractive shape					
2	Packaging shape can help differentiate a product from its competitors and make it stand out on the shelf					
3	I prefer simple shape rather than complicated one					
4	The possibility that I can benefit from the shape of the packaging by using it for other purpose.					
	Packaging Material	**1**	**2**	**3**	**4**	**5**
1	Quality of the packaging material is important to me during buying process					
2	I am more likely to buy a product if the packaging is made from eco-friendly material.					
3	While choosing the product I consider the packaging material as an important factor as it protects the product.					
	Packaging Image	**1**	**2**	**3**	**4**	**5**
1	Packaging with attractive and visually appealing images makes me more likely to purchase a product					
2	I am more likely to trust a product if the packaging image represents the product accurately					
3	Packaging with cartoon characters makes a product more attractive and appealing to me					
4	Image on the outer packaging misleads me about the product's size, colour, pattern etc.					
	Packaging Design	**1**	**2**	**3**	**4**	**5**
1	The technical aspects of the packaging design attract your attention to the product					
2	The design of the packaging is not important in attracting your attention to the product					
3	The packaging design attracts your attention to varying degrees depending on the nature of the product					
4	The packaging design gives enough information to identify the components of the product.					

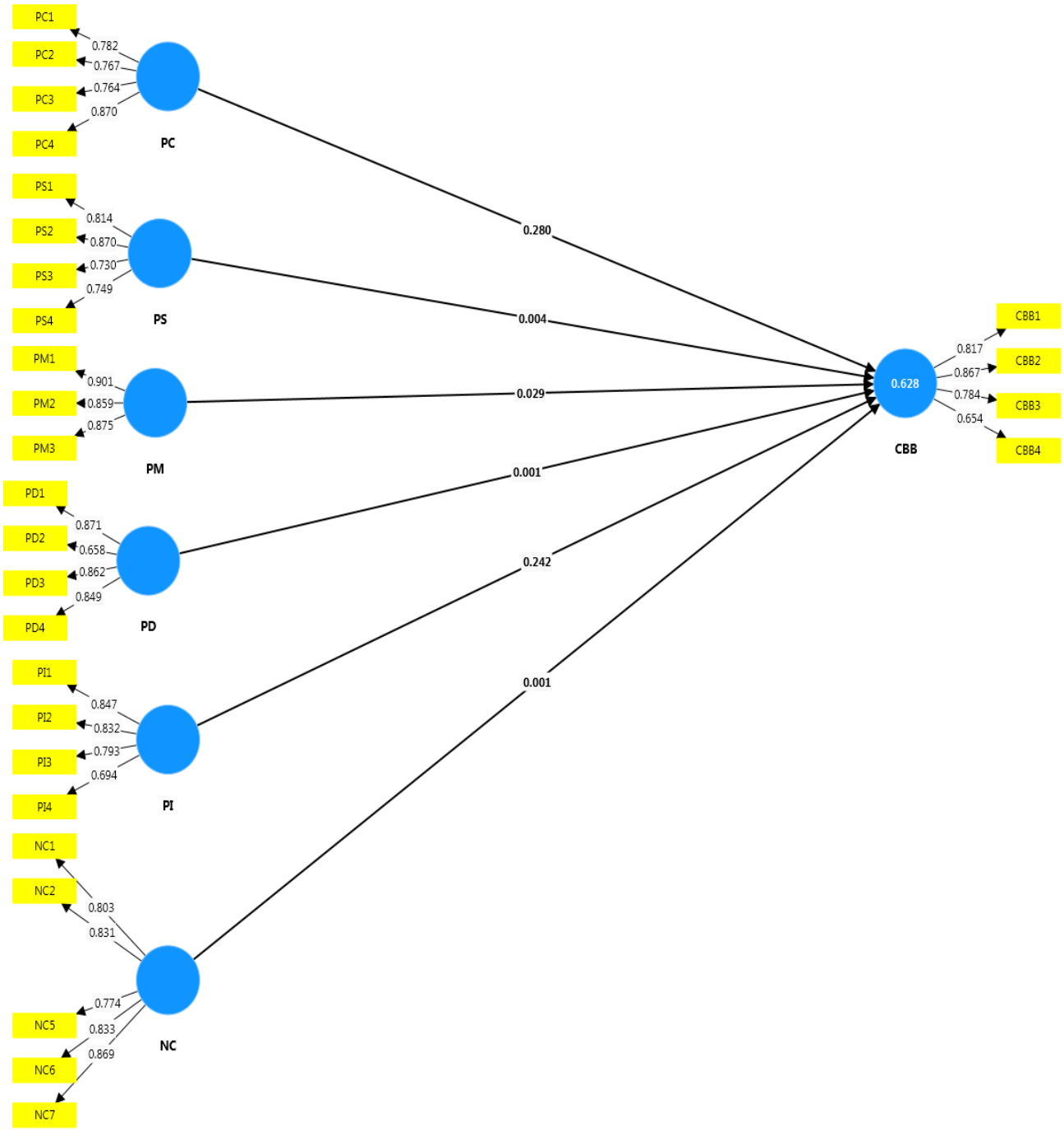
Section B

There are various type of Nutritional Claims that we see on different FMCG products while buying them. Nutritional Claims like (**Pepsi**:- Zero Sugar, **Tropicana**:- With Calcium & Vitamin D and 170 Calories per bottle, **Too Yumm Chips**:- Multigrain [Power of 7grains] with 40% less fat, **Saffola Oil** :- No Cholesterol, Healthy lifestyle –Healthy Heart and such other claims, **Kellogg's Special K Cereals**:- Vitamin D, Vitamin B, Iron+Zinc Folic Acid).

	Nutritional Claims	**1**	**2**	**3**	**4**	**5**
1	I always read the information and nutritional claims provided on the product					
2	I buy products based on the information and claims provided on it.					
5	I fully trust the information provided and nutritional claims made on the products.					
6	Packaging that communicates the nutritional benefits of a product is more appealing to me.					
7	Packaging that highlights nutritional claims makes me perceive the product as higher quality.					
	Note: Question number 3 & 4 has been removed since its results were not in the acceptable limits.					
	Brand Recognition	**1**	**2**	**3**	**4**	**5**
1	Among several similar products available on the shelf I recognize a new brand based on its packaging					
2	I purchase a product of a brand because of the attractive packaging it has.					
3	I believe that packaging plays a role in creating a positive first impression of a product and its brand.					
4	I will recommend a product to others base on its packaging.					
5	The packaging of a product affects my perception of its quality and brand of the product.					
6	I like to try a new product based on its attractive packaging leaving my regularly purchasing product.					
7	While buying an unfamiliar brand its packaging helps me in making purchase decisions					

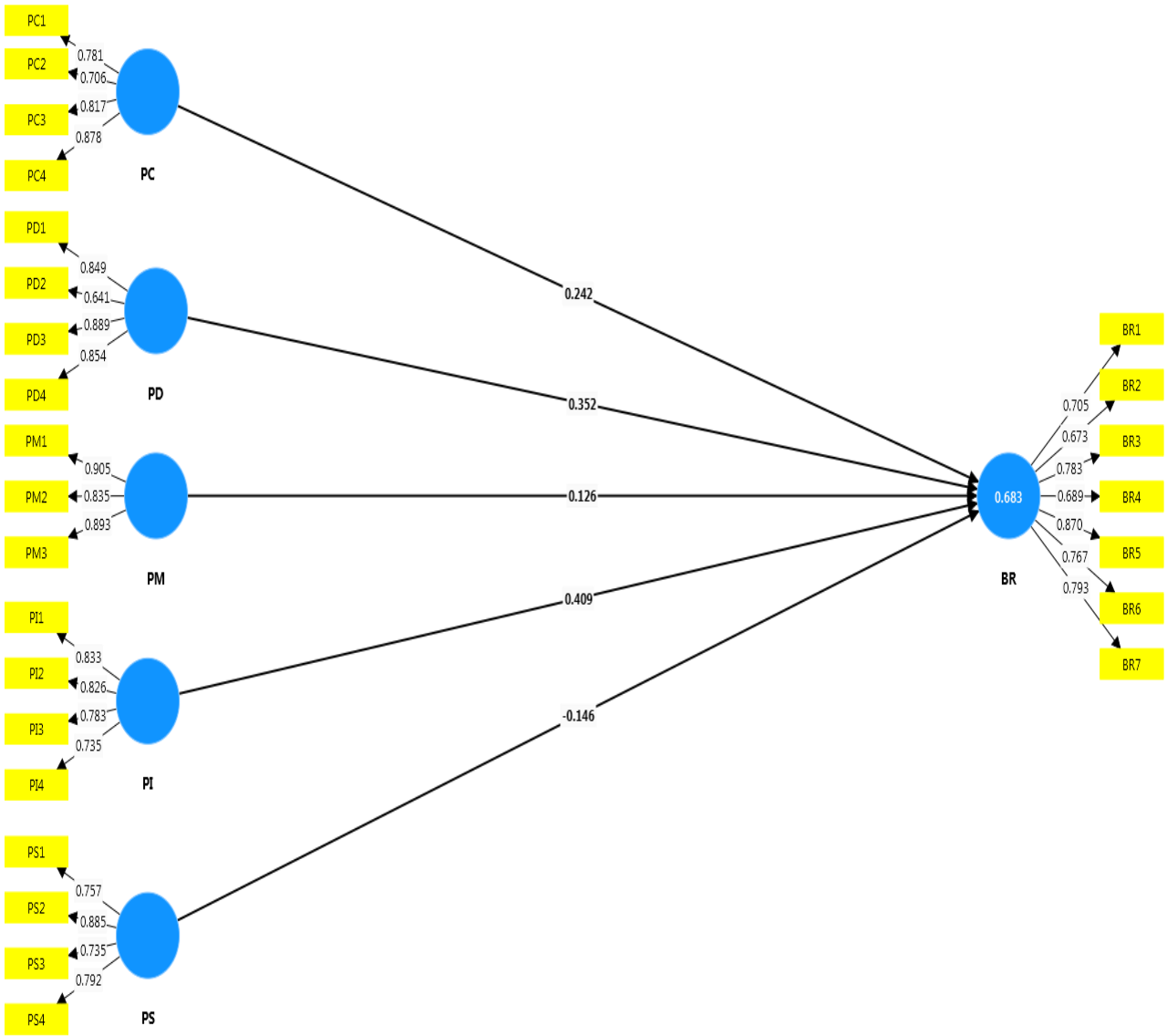
Appendix II: Measurement Model

Fig 1



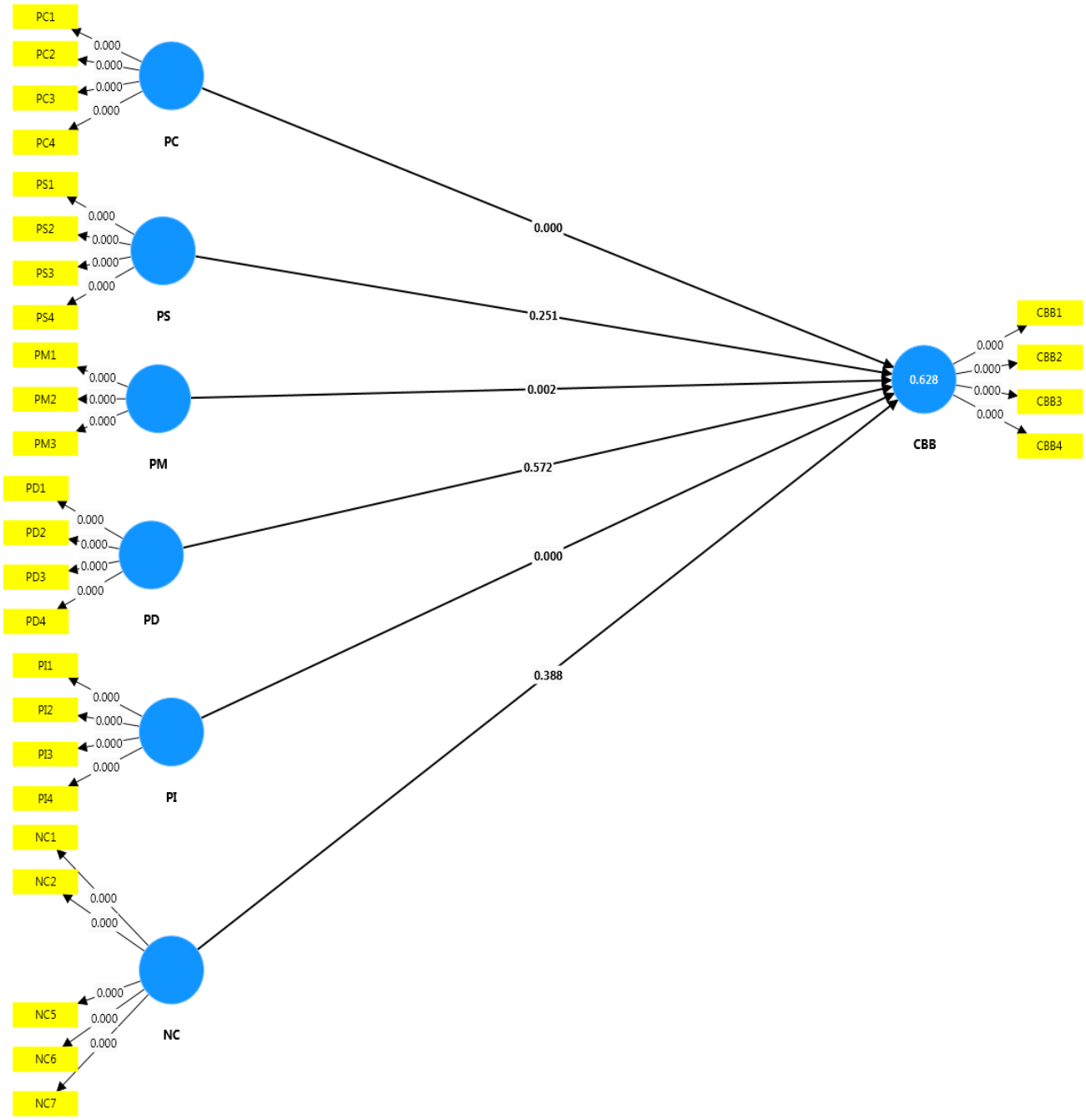
Measurement Model

Fig 2



Appendix III: Structural Model

Fig 1



Structural Model

Fig 2