Assessing the Role of Determinants on Consumer's Purchase Intention and Consumption of Branded Bread in an Academic Environment

Sushil Kumar[1]; Hena Imtiyaz[2]*

[1]Research Scholar, Department of Processing and Food Engineering, Sam Higginbottom University of Agriculture, Technology and Sciences, Prayagraj – 211007 Uttar Pradesh India,
[*2]Assistant Professor, Department of Processing and Food Engineering, Sam Higginbottom University of Agriculture, Technology and Sciences, Prayagraj – 211007 Uttar Pradesh India.
*Corresponding Author

Received:- 08 April 2025/ Revised:- 15 April 2025/ Accepted:- 25 April 2025/ Published: 30-04-2025
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Abstract— *The present research aims to investigate the role of convenience orientation, time scarcity, cooking skills, sensory appeal, nutritional quality, safety consciousness, health consciousness, perceived price, product information, processing technology and packaging quality on purchase intention and consumption of branded bread. A structured questionnaire was used to collect data from 500 consumers across four universities of Haryana, India. Confirmatory factor analysis and structural equation modeling were used to analyse the data. The factor loading, cronbach's alpha, composite reliability, average variance extracted and correlations estimates demonstrate good internal consistency and reliability of questionnaire as well as convergent and discriminant validity of measurement model. The model fit indices demonstrate good fit of measurement and structural models. The path analysis of structural model reveal that convenience orientation (ß=0.84); sensory appeal (ß=0.73); nutritional quality (ß=0.69); safety consciousness (ß=0.70); health consciousness (ß=0.82); perceived price (ß=0.61); time scarcity (ß=0.75); lack of cooking skills (ß=0.59); packaging quality (ß=0.77); product information (ß=0.86); and processing technology (ß=0.81) were positively related with purchase intention and consumption of branded bread. Convenience orientation, health consciousness, processing technology and product information/labeling were the key determinants influencing consumer's purchase intention and consumption of branded bread in an academic environment.*

Keywords— Branded bread; determinants; purchase intention; consumption; SEM.

I. INTRODUCTION

The demand for bakery products is rising, due to convenience and nutritional benefits. Bread is considered as a convenience food, which requires minimum time and culinary knowledge to prepare and consume. New low-carb, high-fibre, multigrain and fortified bread that appeal to health-conscious consumers has triggered the market growth. Global bread market is estimated to register a compound annual growth rate (CAGR) of 1.43% during 2019-2024. The European bakery products market is expected to grow at a CAGR of 3.12% during the forecast period of 2020 - 2025. Europe holds the largest share in the global bread market, by volume United States retail packaged bread market size was valued at over USD 20 billion in 2018 and is expected to register over 2.5% CAGR from 2019 to 2026. The Asia-Pacific bakery products market is estimated to record a CAGR of 8.46% during the forecast period of 2022-2027. Indian bakery market is estimated to grow at a CAGR of 8.5% between 2021 and 2026 to reach a value of USD 12.39 billion by 2026. Indian bread market is projected to grow at CAGR of 10% and reach nearly $ 1.4 billion by 2026 on an account of rising awareness about healthy lifestyle and wellness, increasing disposable income, busy lifestyle and changing eating habits of the consumers across the country (Research and Market 2020).

The convenience orientation is important determinant, which drives consumer towards shopping and consumption of branded bread. The significant increase of female employment, rise in nuclear families, busy work schedule, desire to maximize social and leisure time, long working hours, career-oriented lifestyle and multiple responsibilities are the most important factors influencing convenience food choice (Hena *et al.*, 2021a; Hena *et al.*, 2021b; Hena *et al.*, 2022a; Hena *et al.*, 2022b; Hena *et*

al., 2023). Time scarcity, induced by various factors results in the modification of food consumption behavior (Contoni *et al.*, 2018; Hena *et al.*, 2023). Cooking skills and motivation is important to provide nutritive and balanced diet for a healthy lifestyle. In both developed and emerging economies, cooking skills and motivation are diminishing fast due to lack of training from parents, and busy lifestyle. Irrespective of gender, cooking is perceived as a difficult and low priority task (Priyadarshini, 2015; Djupegot *et al.*, 2017; Hena *et al.*, 2023).

Sensory characteristics such as taste, appearance, freshness, texture, color, and smell are important motivating factors, driving consumers towards shopping and consumption of branded bread. Due to advances in food processing and packaging technology, the sensory appeal of convenience food products has been considerably improved in recent years. The sensory appeals undoubtedly are believed to influence consumers' perception, purchase intention and consumption of convenience food products significantly (Dewettinck *et al.*, 2008; Tikkanen and Vääriskoski, 2010; Lakshmi, 2016; Skorepa and Picha, 2016; Jadhav and Chavan, 2019; Khannal, 2020; Hena *et al.*, 2021a, Compaore-Sereme *et al.*, 2023). Nutritional quality is another most important determinant, which motivates and drives consumers towards convenience food choice as well as being directly linked with perception, purchase decision, and consumption. Nutritional quality such as nutritional value, natural ingredients, protein, fiber, vitamin, mineral and quality certification are the important factors, which drive consumers towards purchase intention and consumption of convenience food products like bread (Tikkanen and Vääriskoski, 2010; Moslehpour *et al.*, 2015; Cecilia *et al.*, 2016; Hena *et al.*, 2021a; Lădaru *et al.*, 2021).

Food safety is another important determinant that influences the shopping and consumption of branded bread. The safety attributes such as additives, pesticides, hormones, artificial ingredients, and safety certification are important attributes of food safety. Food safety is one of the most influential factor in context of shopping and consumption of food products (Olusegun *et al.*, 2015; Hena *et al.*, 2021a). Health is the prime concern of consumers while purchasing and consuming convenience food such as branded bread. Health is a multidimensional construct that embodies overall wellbeing of consumers regarding physical, mental, and social aspects. Health-related issues such as calories, fat, salt, sugar, and balanced diet play important roles in influencing consumers for purchase and consumption of processed food products (Musaiger, 2014; Cecilia *et al.*, 2016; Contini *et al.*, 2018; Sajdakowska *et al.*, 2019; Engindeniz *et al.*, 2021; Hena *et al.*, 2021a; Wambugu and Musyoka, 2022).

Food price, family income, disposable income, and availability are the major economic drivers influencing shopping and eating of bakery products. Changing lifestyle, employment status, dual income, availability of the product choice and entry of multinational companies in bakery sector are the most important drivers influencing consumer's choice for branded bread in India (Tikkanen and Vääriskoski, 2010; Skorepa and Picha, 2016; Engindeniz *et al.*, 2021; Lădaru *et al.*, 2021; Al Togar and Al Hakim, 2022). Product information, sensory, nutritional facts, certification, quality, health, cooking instructions, place of origin and price are important attributes of food labeling / product information that attract and motivate consumers towards shopping and consumption of food products (Grujic *et al.*, 2013). Food processing technology plays an important role in improving and maintaining sensory, quality, safety and health attributes as well as the acceptability of food products (Ojha *et al.*, 2015; Misra *et al.*, 2017; Hena *et al.*, 2022a).

Bakery product is one of the fastest growing sectors in the Indian economy. Demand for branded bread is increasing significantly in India, particularly in urban areas, owing to a busy lifestyle, lack of cooking skills and motivation, higher disposable income, career-oriented work commitments, a significant increase in dual working families, desire for more leisure time, and a significant change in food-related lifestyle. Despite the significant market expansion and economic relevance of bakery products in India, no comprehensive research has been conducted to examine the impact of determinants influencing consumer's purchase and consumption of branded bread. Therefore the main objective of this study was to understand the role of convenience orientation, time scarcity, cooking skills, sensory appeal, nutritional quality, safety consciousness, health consciousness, perceived price, product information, processing technology and packaging quality on purchase intention and consumption of branded bread in an academic environment.

1.1 Theoretical background and development of hypotheses:

1.1.1 Convenience orientation:

The convenience orientation induced by multiple factors is a key determinant, influencing consumer purchase intention and consumption of branded bread. The significant increase of female employment, significant rise in expendable income, diminishing trend of cooking skill and motivation, multiple responsibilities, busy work schedule, and competitive environment significantly increased the demand and consumption of convenience food (Olusegun *et al.*, 2015; Contini *et al.*, 2018; Hena *et al.*, 2021b). Considering the aforementioned research findings, the following hypothesis is proposed:

H 1: Convenience orientation is positively related to purchase intension of branded bread.

1.1.2 Time scarcity:

Time scarcity, induced by various factors results in the modification of food consumption behaviour such as significant increase in convenience food consumption and reduction in home cooked food. Long and erratic working hours, significant increase in women's employment, desire for more time on leisure activities, decreasing in joint family system; employment status, significant increase in dual working nuclear families and work pressure are the major factors resulting to time scarcity that drive consumers towards convenience food choice (Cecilia *et al.*, 2016; Hena *et al.*, 2023). In light of the above-mentioned findings, the following hypothesis is formulated:

H 2: Time scarcity is positively related to purchase intension of branded bread.

1.1.3 Cooking skills:

Cooking skills, knowledge and motivation are eroding in both developed and emerging economies due to significant changes in lifestyle, reluctant to pass cooking skills to daughter due to inclination towards professional career, desire to maximize leisure time, time pressure due to multiple responsibilities and lack of provision for imparting culinary skills in schools/ colleges / universities (Hartmenn *et al.*, 2013; Priyadarshini, 2015; Contini *et al.*, 2018; Sajdakowska *et al.*, 2020; Hena *et al.*, 2023). The lack of cooking skills, knowledge and motivation are important, factors in motivating and driving consumers towards choice of convenience food such as branded bread. Considering the aforementioned research findings, the following hypothesis is postulated:

H 3: Lack of cooking skills is positively related to purchase intension of branded bread.

1.1.4 Sensory appeal:

The sensory characteristics such as taste (Heenan *et al.*, 2009; Jadhav and Chavan, 2019; Sajdakowska *et al.*, 2020; Hena *et al.*, 2021a); flavour (Braghieri *et al.*, 2016; Hena *et al.*, 2021a); appearance (Heenan *et al.*, 2009; Tikkanen and Vääriskoski, 2010; Skorepa and Picha, 2016; Hena *et al.*, 2021a); freshness (Heenan *et al.*, 2009; Skorepa and Picha, 2016); texture (Braghieri *et al.*, 2016; Hena *et al.*, 2021a); overall liking (Braghieri *et al.*, 2016) and smell (Sajdakowska *et al.*, 2020; Hena *et al.*, 2021a) are the important motivating factors, driving consumers towards shopping and consumption of convenience food such as branded bread. Considering the aforementioned research findings, the following hypothesis is developed:

H 4: Sensory appeal is positively related to purchase intension of branded bread.

1.1.5 Nutritional quality:

The nutritional quality of convenience food such as bread play important role in motivating and driving consumers towards its purchase and consumption (Dewettinck *et al.*, 2008; Grujic *et al.*, 2013; Moslehpur *et al.*, 2015; Di Vita *et al.*, 2019; Khanal, 2020; Hena *et al.*, 2021a; Lădaru *et al.*, 2021). The food quality certification from authorized agencies and brand provide the details of production process, ingredients, nutritional facts, shelf life, cooking instruction, place of production, safety, environment and ethical issues to consumers are the core aspects of integrated food quality concept (Hena *et al.*, 2021a). Mascarello *et al.* (2015) reported that the perception regarding the nutritional quality of food products considerably influenced the purchase decision and consumption behavior of consumers. Based on the comprehensive literature review, the following hypothesis is proposed:

H 5: Nutritional quality is positively related to purchase intension of branded bread.

1.1.6 Safety consciousness:

Food safety is another important determinant influences the shopping and consumption of processed food such as branded bread (Olusegun *et al.*, 2015). The primary concerns of consumers about food safety are additives (Hena *et al.*, 2021a), pesticides (Omari and Frempong, 2015; Hena *et al.*, 2021a), hormones (Hena *et al.*, 2021a), artificial ingredients (Omari and Frempong, 2015; Hena *et al.*, 2021a), color (Omari and Frempong, 2015; Hena *et al.*, 2021a) which in turn significantly influenced consumer's purchase intention and consumption of processed food such as branded bread. Based on the aforementioned research findings, the following hypothesis is proposed:

H 6: Safety consciousness is positively related to purchase intention of branded bread.

1.1.7 Health consciousness:

Health benefit is most important determinant, which motivate and drive consumer's for purchase and consumption of bread (Dewettinck *et al.*, 2008; Sajdakowska *et al.*, 2020; Engindeniz *et al.*, 2021; Wambugu and Musyoka, 2022). Health-related issues such as calories (Musaiger, 2014; Hena *et al.*, 2021a), fat (Musaiger, 2014; Hena *et al.*, 2021a), salt (Cecilia *et al.*, 2016; Hena *et al.*, 2021a), sugar (Cecilia *et al.*, 2016; Hena *et al.*, 2021a) and balanced diet (Contini *et al.*, 2018; Hena *et al.*, 2021a) play important roles in influencing consumer's for purchase and consumption of convenience food such as branded bread. Hoek *et al.* (2017) stated that the government regulatory authorities, responsible for the formulation of food laws and regulations, should prioritize health-related attributes of convenience food. Based on the aforementioned research findings, the following hypothesis is proposed:

H 7: Health consciousness is positively related to purchase intention of branded bread.

1.1.8 Perceived price:

Family income, disposable income, food price and availability are the major economic drivers influencing shopping and consumption of bakery products. Changing lifestyle, employment status, dual income, availability of the product choice, competitive price and entry of multinational companies in bakery sector are the most important drivers influencing consumers purchase decision and consumption of branded bread (Tikkanen and Väänskoski, 2010; Nagyová *et al.* 2014; Skorepa and Picha, 2016; Lădaru *et al.*, 2021; Engindeniz *et al.*, 2021; Al Togar and Al Hakim, 2022). The convenience orientation, cooking skills, processing technology, sensory appeal, nutritional quality, safety consciousness, health consciousness and food price are important determinants which influenced consumer's food choice (Hena *et al.*, 2021a; Hena *et al.*, 2021b; Hena *et al.*, 2022a; Hena *et al.*, 2022b; Hena *et al.*, 2023). Based on the aforementioned research findings, the following hypothesis is proposed:

H 8: Perceived price is positively related to purchase intention of branded bread.

1.1.9 Product information:

Sensory, nutritional facts, certification, quality, safety, health, cooking instructions, place of origin and price are important attributes of food product information / labeling that attract and motivate consumers towards shopping and consumption of convenience food such as bread (Vlaeminck *et al.*, 2014; Hena *et al.*, 2022a). Grujic *et al.* (2013) reported that it is necessary to inform and educate consumers regarding food quality, safety and labeling. Mhurchu *et al.* (2018) stated that the product information had positive impact on the purchase of healthier food. In light of the aforementioned research findings, the following hypothesis is proposed.

H 9: Product information is positively related to purchase intention of branded bread.

1.1.10 Processing technology:

The consumers perceived that advanced and novel food processing technologies improve sensory appeal, nutritional quality, safety attributes, healthiness and shelf life of processed food products. Advanced food processing technologies such as HPP and PEF maintained naturalness, improved sensory, quality and shelf life of processed food products (Ojha *et al.*, 2015; Misra *et al.*, 2017; Hena *et al.*, 2022a). In light of the aforementioned research findings, the following hypothesis is proposed:

H 10: Novel food processing technology is positively related to purchase intention of branded bread.

1.1.11 Packaging quality:

Packaging characteristics is an important determinant which motivates and drives consumers towards convenience food choice, like branded bread (Tikkanen and Väänskoski, 2010; Wyrwa and Barske, 2017; Majid *et al.*, 2018; Jadhav and Chavan, 2019; Hena *et al.*, 2022a). Packaging attributes includes colour, shape, size, functional attributes, durability, informational attributes, logo, brand name, and product information. Jadhav and Chavan (2019) reported that product and brand recognition, affordability, availability and packaging were the important factors that influence the preference of bakery products like bread. In light of the aforementioned research findings, the following hypothesis is proposed:

H 11: Packaging quality is positively related to purchase intention of branded bread.

1.1.12 Purchase intention and consumption:

The consumer's purchase intention and consumption of convenience food such as branded bread is complex process and governed by socio demographics, physical, economic, psychological, marketing, commercial, ethical and religious determinants (Priyadarshini, 2015; Bandara *et al.*, 2016; Hena *et al.*, 2021a; Hena *et al.*, 2021b; Hena *et al.*, 2022a; Hena *et al.*, 2022b; Hena *et al.*, 2023). Based on the aforementioned research findings, the following hypothesis is proposed:

H 12: Purchase intention of branded bread is positively related to consumption of branded bread.

The conceptual model for the present study is based on aforementioned research findings to assess the role of convenience orientation, time scarcity, cooking skills, sensory appeal, nutritional quality, safety consciousness, health consciousness, perceived price, product information, processing technology and packaging quality influencing purchase intention and consumption of branded bread (Figure 1).

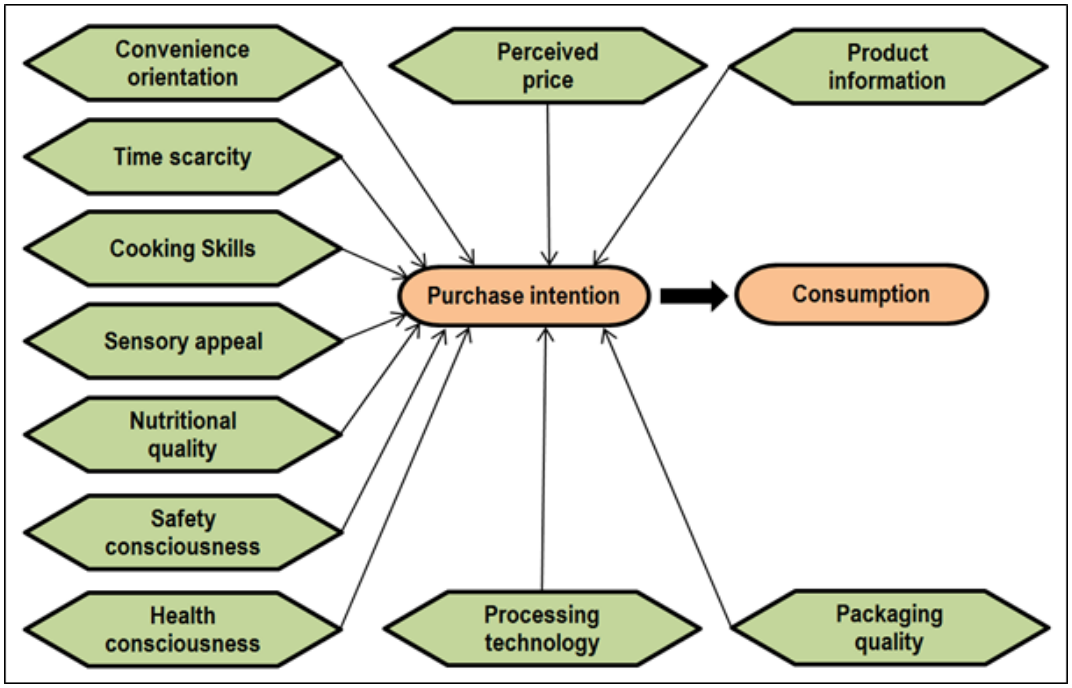


FIGURE 1: Conceptual Model

II. MATERIALS AND METHODS

2.1 Description of study area:

The present study was carried out in North India i.e. Hisar, Haryana (29.9' N 75.43' E; 215m above sea level) to examine the role of determinants influencing purchase intention and consumption of branded bread. Hisar is one of the fast growing cities of the Northern India. In summer, day temperatures ranges from 40 to 46°C, whereas winter day temperature ranges from 1.5°C to 4°C. The annual rainfall is approximately 450 mm. Total population of Hisar is approx. 1.743 million with 44% females and 56% males and having literacy rate of 81.04%. Hisar comprised of four universities and 10 colleges with a large chunk of students and in service personnel who prefer branded bread.

2.2 Development and pre-testing of questionnaire:

The questionnaire was developed to examine the role of convenience orientation, time scarcity, cooking skills, sensory appeal, nutritional quality, safety consciousness, health consciousness, perceived price, product information, processing technology and packaging quality on purchase intention and consumption of branded bread. The questionnaire was pre-tested at Haryana Agricultural University, Hisar, India. After completing the questionnaire, the participants were requested to provide their feedback regarding design, structure and interpretation of the questionnaire to examine the role of convenience orientation, time scarcity, cooking skills, sensory appeal, nutritional quality, safety consciousness, health consciousness, perceived price, product information, processing technology and packaging quality on purchase intention and consumption of branded bread. The feedback obtained from participants / consumers were included in final questionnaire (Appendix - A) to ensure accuracy

and precision in data collection (Singh and Kathuria, 2016; Konuk, 2019; Hena *et al.*, 2021a; Hena *et al.*, 2021b; Hena *et al.*, 2022a; Hena *et al.*, 2022b; Hena *et al.*, 2023).

2.3 Recruitment of participants / consumers:

The non-probability purposive sampling method was adopted for recruitment of the participants / consumers because researchers were targeting a specific group of participants / consumers as they are the major consumers of branded bread (Singh and Kathuria, 2016; Hena *et al.*, 2021a; Hena *et al.*, 2021b; Hena *et al.*, 2022a; Hena *et al.*, 2022b; Hena *et al.*, 2023). The present study was comprised of 500 participants / consumers across four universities of Hisar, Haryana. A total number of participants from Haryana Agricultural University, Guru Jambheshwar University of Science and Technology, Lala Lajpat Rai University of Veterinary and Animal Sciences and Om Sterling Global University, Hisar, Haryana were 125, 125, 125 and 125 respectively. The participants / consumers comprised of 58.2% males and 41.8% females with the ages ranging from 18 to 65 years. The participants / consumers comprised of 51.8% single and 48.2% married, in which 57.2% were unemployed and 42.8% were employed. The educational level of the participants / consumers ranged from senior secondary school to doctoral degree. The annual family income of the participants / consumers ranged from US$ 950 to US$ 37500. The sample size of 500 participants / consumers taken in the present study was more than the estimated sample size of 385 as well as higher than 400 as recommended for a population over 0.25 million with a confidence level of 95% and 5% margin of error (The Research Advisor, 2006; Singh and Kathuria, 2016; Hena *et al.*, 2021a; Hena *et al.*, 2021b; Hena *et al.*, 2023). Total 37 participants / consumers were eliminated because they did not respond / provide in-complete information. The final sample size was 463 which resulted in a response rate of 92.60%.

2.4 Data collection:

The data were collected from teaching and non-teaching staff and students across four universities i.e. Haryana Agricultural University, Guru Jambheshwar University of Science and Technology, Lala Lajpat Rai University Veterinary and Animal Sciences and Om Sterling Global University in Hisar, Haryana. Structured and pre-tested questionnaires were distributed to 500 participants/consumers in four universities. The researcher's distributed the questionnaire to the participants/consumers and briefs them about the purpose and objectives of the study. The influence of aforementioned determinants on purchase intention and consumption of branded bread were determined on five point likert scale (Strongly disagree = 1, disagree = 2, don not know = 3, agree = 4, strongly agree = 5). The participants were asked to choose one from 1 to 5 for each question (Singh and Kathuria, 2016; Hena *et al.*, 2021a; Hena *et al.*, 2021b; Hena *et al.*, 2022a; Hena *et al.*, 2022b; Hena *et al.*, 2023).

2.5 Data analysis:

The statistical software SPSS version 24 was used to determine mean, standard deviation, skewness, and kurtosis. Further, SPSS was employed to determine Cronbach's alpha to assess internal consistency and reliability of questionnaire. The AMOS software version 23 was used to perform confirmatory factor analysis (CFA) and structural equation modeling (SEM). The CFA was carried out to estimate factor loading, composite reliability, average variance extracted, and model fit indices. The composite reliability of the constructs / determinants of the questionnaire was determine to examine the reliability of measurement model (Singh and Kathuria, 2016; Hena *et al.*, 2021a; Hena *et al.*, 2021b; Hena *et al.*, 2022a; Hena *et al.*, 2022b; Hena *et al.*, 2023). The factor loading, average variance extracted and correlations were determined to assess the convergent and discriminant validity of measurement model (Contini *et al.*, 2018; Hena *et al.*, 2021a; Hena *et al.*, 2021b; Hena *et al.*, 2022a; Hena *et al.*, 2022b; Hena *et al.*, 2023). The statistical indices such as comparative fit index (CFI), Tucker–Lewis index (TLI), goodness of fit index (GFI), root mean square error of approximation (RMSEA) and standardized root mean-square residual (SRMR) and χ^2/df (Chi square/ degree of freedom) were determined to assess the fit of the measurement and structural models. Standardized estimate / path co-efficient (ß), t-value and p-value were determines to test the proposed hypotheses (Rezai *et al.*, 2014; Singh and Kathuria, 2016; Konuk, 2018; Hena *et al.*, 2021a; Hena *et al.*, 2021b; Hena *et al.*, 2022a; Hena *et al.*, 2022b; Hena *et al.*, 2023).

III. RESULTS

3.1 Descriptive statistics:

The mean participant score of the items revealed that the "easy to prepare" within convenience orientation, "long working hours" within time scarcity, "limited knowledge about cooking" within cooking skills, "good flavor" within sensory appeal, "contains natural ingredients" within nutritional quality, "contains no hormones" within safety consciousness, "low sugar content" within health consciousness, "not expensive" within perceived price, "ingredients printed on packet" within product

information, "natural ingredients for processing of food" within processing technology and "good quality and appearance of packaging" within packaging quality were the most important factors in relation to purchase intention and consumption of branded bread (Table 1).

TABLE 1
FACTOR LOADING, CRONBACH'S ALPHA, COMPOSITE RELIABILITY AND AVERAGE VARIANCE EXTRACTED OF THE DETERMINANTS INFLUENCING CONSUMER PURCHASE INTENTION AND CONSUMPTION OF BRANDED BREAD

Construct	Item	Mean score	Factor loading	p – value	Cronbach's alpha	Composite reliability	Average variance extracted
Convenience orientation (CNV)	• CON 1	4.71	0.787	***	**0.868**	**0.855**	**0.665**
	• CON 2	3.71	0.829	***			
	• CON 3	4.34	0.775	***			
	• CON 4	4.19	0.796	***			
	• CON 5	4.6	0.887	***			
Time scarcity (TS)	• TS 1	4.41	0.851	***	**0.874**	**0.842**	**0.611**
	• TS 2	4.33	0.752	***			
	• TS 3	4.26	0.718	***			
	• TS 4	3.9	0.875	***			
	• TS 5	3.72	0.712	***			
Cooking Skill (CKS)	• CKS 1	3.89	0.726	***	**0.863**	**0.83**	**0.627**
	• CKS 2	3.51	0.791	***			
	• CKS 3	3.41	0.813	***			
	• CKS 4	3.25	0.835	***			
Sensory appeal (SEN)	• SEN 1	4.39	0.785	***	**0.835**	**0.901**	**0.648**
	• SEN 2	4.59	0.813	***			
	• SEN 3	4.66	0.789	***			
	• SEN 4	4.45	0.772	***			
	• SEN 5	4.69	0.863	***			
Nutritional quality (QUL)	• QUL 1	3.88	0.804	***	**0.779**	**0.808**	**0.695**
	• QUL 2	3.61	0.814	***			
	• QUL 3	3.41	0.875	***			
	• QUL 4	3.11	0.856	***			
	• QUL 5	4.54	0.816	***			
	• QUL 6	4.16	0.837	***			
Safety consciousness (SFTY)	• SFTY 1	4.62	0.714	***	**0.885**	**0.916**	**0.687**
	• SFTY 2	3.13	0.795	***			
	• SFTY 3	4.44	0.888	***			
	• SFTY 4	4.62	0.863	***			
	• SFTY 5	4.07	0.874	***			
Health consciousness (HLT)	• HLT 1	3.81	0.843	***	**0.879**	**0.904**	**0.654**
	• HLT 2	4.33	0.764	***			
	• HLT 3	4.43	0.816	***			
	• HLT 4	4.48	0.761	***			
	• HLT 5	4.27	0.855	***			
Perceived price (PRC)	• PRC 1	4.62	0.865	***	**0.865**	**0.896**	**0.685**
	• PRC 2	3.54	0.799	***			
	• PRC 3	3.1	0.819	***			
	• PRC 4	4.22	0.824	***			

Product information (PIF)	• PIF 1	4.62	0.876	***	**0.895**	**0.913**	**0.68**
	• PIF 2	4.51	0.783	***			
	• PIF 3	3.75	0.805	***			
	• PIF 4	4.34	0.839	***			
	• PIF 5	3.76	0.818	***			
Processing technology (PCT)	• PCT 1	4.2	0.868	***	**0.898**	**0.919**	**0.694**
	• PCT 2	3.67	0.821	***			
	• PCT 3	4.08	0.833	***			
	• PCT 4	4.46	0.829	***			
	• PCT 5	4.37	0.816	***			
Packaging quality (PKG)	• PKG 1	4.62	0.777	***	**0.896**	**0.914**	**0.683**
	• PKG 2	4.33	0.788	***			
	• PKG 3	3.87	0.865	***			
	• PKG 4	4.25	0.834	***			
	• PKG 5	3.93	0.864	***			
Purchase Intention (PI)	• PI 1	3.17	0.773	***	**0.922**	**0.941**	**0.699**
	• PI 2	4.06	0.863	***			
	• PI 3	4.71	0.842	***			
	• PI 4	4.46	0.821	***			
	• PI 5	4.67	0.819	***			
	• PI 6	4.09	0.847	***			
	• PI 7	3.97	0.883	***			
Consumption (CON)	• CON 1	4.65	0.848	***	**0.926**	**0.948**	**0.725**
	• CON 2	4.45	0.829	***			
	• CON 3	3.87	0.879	***			
	• CON 4	3.41	0.825	***			
	• CON 5	4.26	0.856	***			
	• CON 6	4.09	0.876	***			
	• CON 7	4.05	0.849	***			

Measurement model fit indices: Comparative fit index (CFI) = 0.928; Tucker-Lewis index (TLI) = 0.923; Goodness of fit index (GFI) =0.919; Root mean square error of approximation (RMSEA) = 0.077; Standardized mean square residual (SRMR) =0.050, Significant at p≤0.01; Skewness = -0.962 to 0.607 Kurtosis = -0.763 to 1.996

The skewness for different items of convenience orientation, time scarcity, cooking skills, sensory appeal, nutritional quality, safety consciousness, health consciousness, perceived price, product information, processing technology, packaging quality, purchase intention and consumption of branded bread ranged from -0.962 to 0.607, which falls within threshold value of -1 to 1. The kurtosis for different items of convenience orientation, time scarcity, cooking skills, sensory appeal, nutritional quality, safety consciousness, health consciousness, perceived price, product information, processing technology, packaging quality, purchase intention and consumption constructs ranged from -0.763 to 1.996, which falls within threshold value of -2 to 2 (Table 1). The results revealed that the participant score / data for different items of convenience orientation, time scarcity, cooking skills, sensory appeal, nutritional quality, safety consciousness, health consciousness, perceived price, product information, processing technology, packaging quality, purchase intention and consumption constructs were normally distributed (Muthen and Kaplan, 1985; Rezai *et al.*, 2014; Hena *et al.*, 2021a; Hena *et al.*, 2021b; Hena *et al.*, 2022a; Hena *et al.*, 2022b; Hena *et al.*, 2023).

3.2 Measurement model:

The factor loading for different items of convenience orientation, time scarcity, cooking skills, sensory appeal, nutritional quality, safety consciousness, health consciousness, perceived price, product information, processing technology, packaging quality, purchase intention and consumption of branded bread were significant ($p \leq 0.01$). The factor loading for different items of the convenience orientation, time scarcity, cooking skills, sensory appeal, nutritional quality, safety consciousness, health

consciousness, perceived price, product information, processing technology, packaging quality, purchase intention and consumption ranged from 0.718 to 0.888. The factor loading for all items of the constructs exceeded the threshold value of 0.70, therefore, all the items of the constructs / determinants were included for the interpretation of the factors influencing consumer purchase intention and consumption of branded bread (Hair *et al.*, 2006; Hena *et al.*, 2021a; Hena *et al.*, 2021b; Hena *et al.*, 2022a; Hena *et al.*, 2022b; Hena *et al.*, 2023). The Cronbach's alpha of the determinants, i.e. convenience orientation, time scarcity, cooking skills, sensory appeal, nutritional quality, safety consciousness, health consciousness, perceived price, product information, processing technology and packaging quality influencing consumer purchase intention and consumption of branded bread ranged from 0.779 to 0.926, which exceeded the threshold value of 0.70 (Table 1). The composite reliability of convenience orientation, time scarcity, cooking skills, sensory appeal, nutritional quality, safety consciousness, health consciousness, perceived price, product information, processing technology, packaging quality, purchase intention and consumption of branded bread ranged from 0.808 to 0.948, which exceeded the threshold value of 0.70 (Table 1). The Cronbach alpha and composite reliability demonstrate good internal consistency and reliability of the questionnaire to assess the role of convenience orientation, time scarcity, cooking skills, sensory appeal, nutritional quality, safety consciousness, health consciousness, perceived price, product information, processing technology and packaging quality on consumer's purchase intention and consumption of branded bread (Hair *et al.*, 2006; Konuk, 2019; Hena *et al.*, 2021a; Hena *et al.*, 2021b; Hena *et al.*, 2022a; Hena *et al.*, 2022b; Hena *et al.*, 2023).

Average Variance Extracted (AVE) for the determinants i.e. convenience orientation, time scarcity, cooking skills, sensory appeal, nutritional quality, safety consciousness, health consciousness, perceived price, product information, processing technology and packaging quality influencing consumer purchase intention and consumption of branded bread ranged from 0.611 to 0.725, which exceeded the threshold value of 0.50. The factor loading and average variance extracted values confirmed convergent validity of the measurement model (Hair *et al.*, 2006; Konuk, 2019; Hena *et al.*, 2021a; Hena *et al.*, 2021b; Hena *et al.*, 2022a; Hena *et al.*, 2022b; Hena *et al.*, 2023). The CFI was 0.928 (≥ 0.90), TLI was 0.923(≥ 0.90), GFI was 0.919 (≥ 0.90), RMSEA was 0.077 (≤ 0.080) and SRMR was 0.050 (≤ 0.080) which were within the recommended threshold values (Table 1). The CFI, TLI, GFI, RMSEA and SRMR values demonstrate the good fit of the measurement model (Singh and Kathuria, 2016; Soon, 2018; Hena *et al.*, 2021a; Hena *et al.*, 2021b; Hena *et al.*, 2022a; Hena *et al.*, 2022b; Hena *et al.*, 2023). The square root of average variance extracted (diagonal values) were higher than the correlation estimates amongst constructs (Table. 2), which confirmed the discriminant validity of measurement model (Fornell and Larcker, 1981; Singh and Kathuria, 2016; Konuk, 2019; Hena *et al.*, 2021a; Hena *et al.*, 2021b; Hena *et al.*, 2022a; Hena *et al.*, 2022b; Hena *et al.*, 2023).

TABLE 2
DISCRIMINANT VALIDITY OF THE MEASUREMENT MODEL

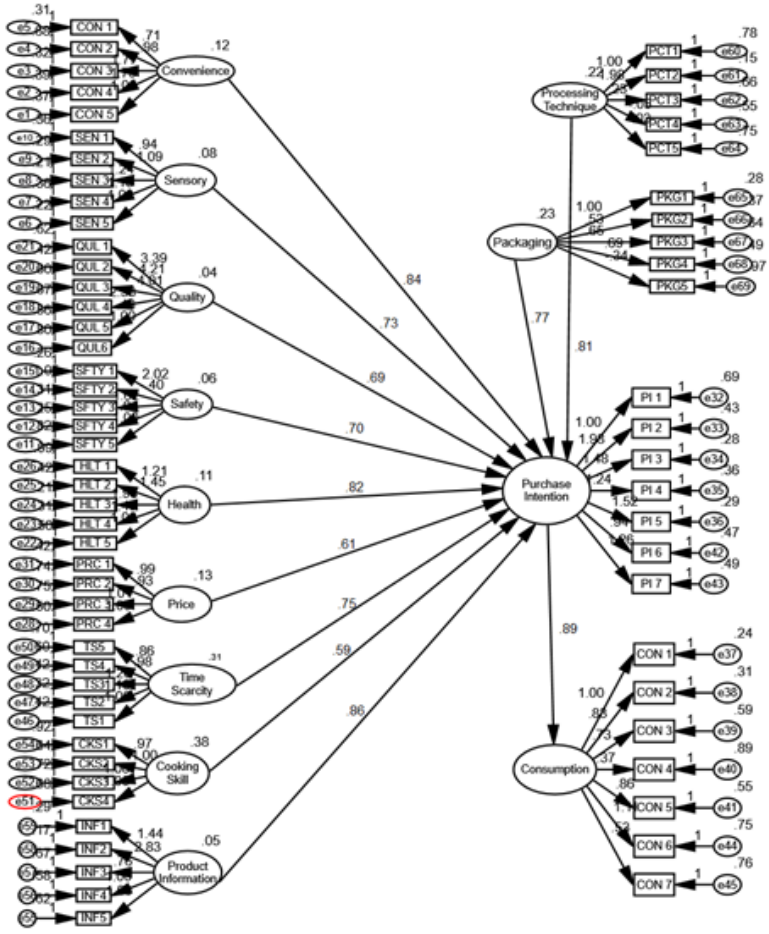
	CNV	TS	CKS	SEN	QUL	SFTY	HLT	PRC	PIF	PCT	PKG	PI	CON
CNV	.813												
TS	.782	.822											
CKS	.744	.695	.801										
SEN	.660	.677	.726	.852									
QUL	.788	.730	.566	.578	.838								
SFTY	.543	.609	.540	.688	.587	.720							
HLT	.685	.742	.404	.589	.602	.624	.798						
PRC	.536	.567	.714	.778	.487	.450	.647	.808					
PIF	.722	.708	.738	.797	.538	.676	.723	.721	.798				
PCT	.585	.461	.662	.516	.542	.415	.706	.626	.599	.871			
PKG	.512	.498	.653	.769	.599	.611	.713	.780	.498	.533	.781		
PI	.615	.578	.781	.684	.697	.429	.685	.699	.626	.705	.775	.809	
CON	.638	.773	.763	.648	.815	.584	.691	.769	.751	.760	.698	.770	.921

3.3 Structural model:

The structural equation modeling (SEM) approach was adopted to examine the association between convenience orientation, time scarcity, cooking skills, sensory appeal, nutritional quality, safety consciousness, health consciousness, perceived price, product information, processing technology and packaging quality with consumer purchase intention and consumption of branded bread. The CFI was 0.934 (≥ 0.90), TLI was 0.938 (≥ 0.90), GFI was 0.966 (≥ 0.90), RMSEA was 0.071(≤ 0.80), SRMR was 0.072(≤ 0.80) and χ^2/df was 3.9(≤5.0), which were within the acceptable range (Fig. 2). The CFI, TLI, GFI, RMSEA, SRMR and χ^2/df values demonstrate a good fit of the structural model (Hu and Bentler, 1999; Rezai *et al.*, 2014;

Singh and Kathuria, 2016; Contini *et al.*, 2018; Hena *et al.*, 2021a; Hena *et al.*, 2021b; Hena *et al.*, 2022a; Hena *et al.*, 2022b; Hena *et al.*, 2023).

The results of the structural model presented in Figure 2 and Table 3, demonstrate the magnitude of association for convenience orientation, time scarcity, cooking skills, sensory appeal, nutritional quality, safety consciousness, health consciousness, perceived price, product information, processing technology and packaging quality with consumer's purchase intention and consumption of branded bread. Hypothesis 1 (H1) which proposed positive relationship between convenience orientation and purchase intention of branded bread was supported because standardized estimate (ß) of path of structural model was significant (ß = 0.84, t-value = 22.452, $p \leq 0.01$). Hypothesis 2 (H2) which proposed positive relationship between time scarcity and purchase intention of branded bread was supported because standardized estimate (ß) of path of structural model was significant (ß = 0.75, t-value =19.526, $p \leq 0.01$). Hypothesis 3 (H3) which proposed positive relationship between lack of cooking skills and purchase intention of branded bread was supported because standardized estimate (ß) of path of structural model was significant (ß = 0.59, t-value =26.408, $p \leq 0.01$). Hypothesis 4 (H4), which proposed positive relationship between sensory appeal and purchase intention of branded bread was supported because standardized estimate (ß) of path of structural model was significant (ß = 0.73, t-value = 33.587, $p \leq 0.01$). Hypothesis 5 (H5) which proposed positive relationship between nutritional quality and purchase intention of branded bread was supported because standardized estimate (ß) of path of structural model was significant (ß = 0.69, t-value = 27.654, $p \leq 0.01$). Hypothesis 6 (H6) which proposed positive relationship between safety consciousness and purchase intention of branded bread was supported because standardized estimate (ß) of path of structural model was significant (ß = 0.70, t-value = 11.325, $p \leq 0.01$). Hypothesis 7 (H7) which proposed positive relationship between health consciousness and purchase intention of branded bread was supported because standardized estimate (ß) of path of structural model was significant (ß = 0.82, t-value = 23.687, $p \leq 0.05$).



Structural model fit indexes: CFI: 0.934; TLI: 0.938; GFI: 0.966; RMSEA: 0.071; SRMR: 0.072; χ^2/df = 3.9.

FIGURE 2: Structural equation modelling to assess the role of convenience orientation, time scarcity, cooking skills, sensory appeal, nutritional quality, safety consciousness, health consciousness, perceived price, product information, processing technology and packaging quality on purchase intention and consumption of branded bread.

TABLE 3
STRUCTURAL MODEL RESULTS TO EXAMINE THE ASSOCIATION BETWEEN CONVENIENCE ORIENTATION, TIME SCARCITY, COOKING SKILLS, SENSORY APPEAL, NUTRITIONAL QUALITY, SAFETY CONSCIOUSNESS, HEALTH CONSCIOUSNESS, PERCEIVED PRICE, PRODUCT INFORMATION, PROCESSING TECHNOLOGY AND PACKAGING QUALITY WITH PURCHASE INTENTION, CONSUMPTION OF BRANDED BREAD.

Hypothesis	Structural Path	Standardized estimate (ß)	Standard error (SE)	t-value	p - value	Results
H1	Convenience orientation → Purchase intention	0.84	0.024	22.452	***	Accepted
H2	Time scarcity → Purchase intention	0.75	0.043	19.526	***	Accepted
H3	Lack of cooking skill → Purchase intention	0.59	0.040	26.408	***	Accepted
H4	Sensory appeal → Purchase intention	0.73	0.016	33.587	***	Accepted
H5	Nutritional quality→ Purchase intention	0.69	0.018	27.654	***	Accepted
H6	Safety consciousness → Purchase intention	0.70	0.021	11.325	***	Accepted
H7	Healthiness consciousness → Purchase intention	0.82	0.025	23.687.	***	Accepted
H8	Perceived price → Purchase intention	0.61	0.034	16.874	***	Accepted
H9	Product information→ Purchase intention	0.86	0.014	26.571	***	Accepted
H10	Novel processing Technology → Purchase intention	0.81	0.110	29.634	***	Accepted
H11	Packaging quality → Purchase intention	0.77	0.45	15.392	***	Accepted
H12	Purchase intention → Consumption	0.84	0.043	66.811	***	Accepted

****** Significant at p ≤ 0.01***

Hypothesis 8 (H8) which proposed positive relationship between perceived price and purchase intention of branded bread was supported because standardized estimate (ß) of path of structural model was significant (ß = 0.61, t-value = 16.874, $p \leq 0.01$). Hypothesis 9 (H9) which proposed positive relationship between product information and purchase intention of branded bread was supported because standardized estimate (ß) of path of structural model was significant (ß = 0.86, t-value = 26.571, $p \leq 0.01$). Hypothesis 10 (H10) which proposed positive relationship between novel processing technology and purchase intention of branded bread was supported because standardized estimate (ß) of path of structural model was significant (ß = 0.81, t-value = 29.634, $p \leq 0.01$). Hypothesis 11 (H11) that proposed positive relationship between packaging quality and purchase intention of branded bread was supported because standardized estimate (ß) of path of structural model was significant (ß = 0.77, t-value = 15.392, $p \leq 0.01$). Hypothesis 12 (H12), that proposed positive relationship between purchase intention and consumption of branded bread was also supported because standardized estimate (ß) of the path of structural model was statistically significant (ß = 0.84, t-value = 66.811, $p \leq 0.01$).

IV. DISCUSSION

Consumer's worldwide seek convenience in meal solution due to significant increase in nuclear and dual working families, long and irregular working hours, competitive and busy lifestyle, lack of cooking skills and motivation, changing food related lifestyle and multiple responsibilities. Convenience orientation is one of the most important factor influencing consumer's food choice. The mean participant's / consumer's score and results of the structural model indicate that convenience orientation had positive and significant role in influencing consumer's purchase intention and consumption of branded bread. The path analyses of the structural model reveal that convenience orientation was positively associated with purchase intention and consumption of branded bread. Further, the mean participant's / consumer's score of items demonstrate that easy to prepare, minimum physical effort to clean up and makes life easier were the key factors within convenience orientation construct that positively influenced consumer's purchase intention and consumption of branded bread. The results of the previous studies revealed that

convenience orientation was the important determinant in influencing consumer's purchase decision and consumption of convenience food (Hena *et al.,* 2021b).

Time scarcity induced by multiple factors, results in modification of food consumption behaviour of consumer. Long working hours, busy lifestyle, hectic work schedule, desire to maximize leisure time and competitive environment are the key factors within the time scarcity construct which play significant and positive role in influencing and motivating consumer's for convenience food choice such as branded bread. The mean participant's / consumer's score for items of time scarcity determinant and analysis of structural model indicate that time scarcity had positive and significant effect on consumer's purchase intention and consumption of branded bread. The results of path analysis of structural model demonstrate positive relationship between time scarcity and purchase intention and consumption of branded bread. Further, mean participant's/ consumer's score of items indicate that long working hours, hectic work schedule and busy lifestyle were the most important factors within time scarcity construct, which positively influenced consumer's purchase intention and consumption of branded bread. The findings of the previous studies support the results of the present study (Jabs and Devine, 2006; Beshara *et al.,* 2010; Cecilia *et al.,* 2016; Djupegot *et al.,* 2017; Contini *et al.,* 2018; Leenders *et al.,* 2019; Hena *et al.,* 2023).

Cooking food from scratch required significant amount of time and physical and mental effort as well as cooking knowledge and experience. Lack of cooking skills and motivation and changing food related lifestyles significantly rise the demand and consumption of convenience food products like brand bread as it saves time, energy and physical effort. The mean participant's / consumer's score and results of structural model analysis indicate that lack of cooking skills and motivation had significant and positive effect on consumer's purchase intention and consumption of branded bread. The path analysis of the structural model demonstrates positive association between lack of cooking skills and purchase intention and consumption of branded bread. Furthers, limited cooking knowledge within cooking skills constructs was the key factor influencing purchase intention influencing purchase intention and consumption of branded bread. The results obtained in the present study are in agreement with the findings of the previous studies (Brunner *et al.,* 2010; Hartmann *et al.,* 2013; Namin *et al.,* 2020; Hena *et al.,* 2023).

Sensory attributes such as taste, colour, appearance, texture and smell are important factors influencing consumer's purchase decision and consumption of food products. Sensory appeal play significant role in motivating and deriving consumers towards purchase and consumption of convenience food products like branded bread. The participant's /consumer's score for sensory appeal and outcomes of the structural model indicate that sensory appeal had significant effect on consumer's purchase intention and consumption of branded bread. The standardized estimate / path coefficient (ß) of the structural model demonstrate the positive relationship between sensory appeal and purchase intention and consumption of branded bread. The results further indicate that pleasant appearance, appealing texture, good taste, nice smell and good flavour within sensory appeal were the key factors, which motivate and drive consumers towards purchase and consumption of branded bread. Previous studies carried out elsewhere indicate that sensory appeal (taste, appearance, freshness, flavour) was important determinant which positively influenced consumer's purchase decision and consumption of branded bread / bakery products, support the results of the present study (Dewettinck *et al.,* 2008; Heenan *et al.,* 2009; Tikkanen and Vääriskoski, 2010; Skorepa and Picha, 2016; Lakshmi, 2016; Jadhav and Chavan, 2019; Sajdakowska *et al.,* 2019; Khannal, 2020). Hena *et al.* (2021a) indicate that consumers in India give more attention on sensory appeal during purchase and consumption of Convenience food.

Nutritional quality generally includes nutritive value, mineral content, protein content, vitamin content, fiber content and natural ingredients of food products. Quality conscious consumers are willing to pay premium price for high quality food products. Consumers generally perceived that advanced and novel food processing technologies improves quality of processed food products (Ohja *et al.,* 2015; Misra *et al.,* 2017; Hena *et al.,* 2022a,). In past two decades consumer's focuses more on nutritional quality of bakery products (Tikkanen and Vääriskoski, 2010; Lakshmi, 2016; Lădaru *et al.,* 2021). The participant's / consumer's score of nutritional quality and results of the structural model indicate that nutritional quality had significant and positive influence on purchase intention and consumption of branded bread. The standardized estimate / path coefficient (ß) of structural model indicate positive relationship / association between nutritional quality and purchase intention and consumption of branded bread. Furthermore, natural ingredients and food quality certification within the nutritional quality were the most important factors positively influencing consumer's purchase intention and consumption of branded bread. The previous studies carried out elsewhere support the results of the present study (Dewettinck *et al.,* 2008; Tikkanen and Vääriskoski, 2010; Moslehpour *et al.,* 2015; Lakshmi, 2016; Khanal, 2020; Lădaru *et al.,* 2021). Hena *et al.* (2021a) demonstrate that food quality certification from regulatory agency was the most important factor in influencing consumer's purchase intention and consumption of convenience food.

Food safety is another crucial determinant influencing consumer's food choice. In recent years, consumers are more concerned about food safety issues because it is directly linked with public health (Omari and Frempong, 2015; Hena *et al.*, 2021a). The mean participant's / consumer's score of food safety construct and analysis of structural model indicate that food safety consciousness had positive and significant influence on consumer's purchase intention and consumption of branded bread. The standardized estimate / path coefficient (ß) of structural model demonstrate positive relationship between food safety consciousness and purchase intention and consumption of branded bread. Further, consumer's belief that it does not contained harmones, artificial ingredients, insecticides and pesticides, which in-turn drive consumers towards purchase and consumption of branded bread. Previous studies carried out elsewhere also revealed that food safely is an important determinant influencing consumer's purchase decision and consumption of convenience food like branded bread (Emeje *et al.*, 2010; Olusegun *et al.*, 2015; Omari and Frempong, 2015; Moreb *et al.*, 2017; Hena *et al.*, 2021a). Misra *et al.* (2017) reported that novel food processing technology reduced processing time and energy consumption as well as significantly improved the quality and safety standards of convenience food.

Health is a prime concerns of consumer's while purchasing and consuming processed food products. Health benefits have become most critical determinant that motivate and drive consumer's to choose specific food product / brand. Health conscious consumer's prefers safe and healthy food products. The mean participant's / consumer's score of health construct and results of structural model demonstrate that health consciousness had positive and significant influence on purchase intention and consumption of branded bread. Standardized estimate / path coefficient (ß) of structural model demonstrate positive association between health consciousness and purchase intention and consumption of branded bread. Further, the mean score of the different items of health construct indicate that consumer's satisfied with the health benefits of branded bread because it is low in fat, salt and sugar contents as well as provide balanced diet. The findings of the previous studies carried out elsewhere for bread, support the results of the present study (Dewettinck *et al.*, 2008; Sajdakowska *et al.*, 2019; Engindeniz and Bolatova, 2021; Hena *et al.*, 2021a; Wambugu and Musyoka, 2022).

Family income, disposable income and food price are important economic drivers influencing consumer's food choice. The food price is one of the most important determinant, which influence consumer's purchase decision and consumption of branded bread. In current scenario, competitive price and promotional offer are main strategy of food industry / marketing agencies to attract consumers for purchasing their food products (Deliens *et al.*, 2016; Hena *et al.*, 2022b). The mean participant's / consumer's score of price construct and outcome of the structural model demonstrate that perceived price had significant and positive influence on purchase intention and consumption of branded bread. Standardized estimate / path coefficient (ß) of structural model indicate positive relationship between perceived price and purchase intention and consumption of branded bread. Further, competitive price, promotional offer and good value for money were the most important factors, which motivate and drive consumer's for purchase and consumption of branded bread. Previous studies carried out elsewhere indicated that food price was the important determinant associated with purchase intention and consumption of branded bread / bakery products, which supports the results of the current study (Tikkanen and Vääriskoski, 2010; Moslehpour *et al.*, 2015; Skorepa and Picha, 2016; Khanal, 2020; Engindeniz and Bolatova, 2021; Al Togar and Al Hakim, 2022).

Informations regarding sensory attributes, nutritional quality, safety measure, healthiness, ingredients, cooking instruction, shelf life, country / place of origin, price and certification are the key attributes of food labelling / product information, which generally assess by consumers before purchasing food products. Therefore, it is important to provide true and authentic information to the consumer's regarding the food products through labelling /product information inorder to attract, motivate and satisfy the consumer's. The mean participant's / consumer's score of product information / labelling construct and results of the structural model analysis demonstrate that product information / labelling had significant and positive effect on consumer's purchase intention and consumption of branded bread. Standardized estimate / path coefficient (ß) of structural model exhibit positive association between product information / labelling and purchase intention and consumption of branded bread. Further, information regarding ingredients, nutritional facts and quality and safety certification were the key factors that positively influenced consumer's purchase intention and consumption of branded bread. The findings of the previous research carried out elsewhere supports the results of the present study (Dewettinck *et al.*, 2008; Hena *et al.*, 2022a).

Food processing and preservation technologies improve sensory appeal, nutritional quality, safety attributes and healthiness of processed food products. Consumer's generally perceive that novel food processing technologies such as high pressure processing (HPP), pulsed electric field (PEF) and cold plasma improves and maintain nutritive value, naturalness, freshness, taste, appearance, aroma, shelf life and healthiness of processed foods as well as minimize environmental damage. The mean participant's / consumer's score and analysis of the structural model demonstrate that novel food processing technology had significant and positive effect on consumer's purchase intention and consumption of branded bread. Standardized estimate /

path coefficient (ß) of structural model exhibit positive association between novel food processing technology and purchase intention of branded bread. Further, consumer's perceived that food processing technology follow international standard and improve sensory appeal, shelf life, nutritional quality and safety attributes as well as it is environmental friendly, which inturn drive consumer's towards purchase and consumption of branded bread. Previous studies carried out elsewhere reported the similar results for processed food products (Ojha *et al.*, 2015; Misra *et al.*, 2017; Hena *et al.*, 2022a).

Food packaging is one of the most important determinant, which influences consumer's perception, purchase decision and consumption of processed food products. The innovative food packaging technology enhance quality and safety of food products. The novel food packaging technologies such as active, intelligent and biodegradable packaging prolong shelf life, maintain quality and safety as well as protect and maintain appearance, taste, colour, aroma and freshness of food products. The visual packaging attributes such as information regarding ingredients, nutritive value, shelf life, price, place of origin, cooking instruction and quality and safety certification play significant role in influencing consumer's purchase decision and consumption of processed food products (Heide and Olsen, 2017; Licciardello, 2017; Majid *et al.*, 2018). The mean participant's / consumer's score and results of structural model indicate that packaging quality had significant and positive effect on consumer's purchase intention and consumption of branded bread. Standardized estimate / path coefficient (ß) of structural model demonstrate positive relationship between packaging quality and purchase intention and consumption of branded bread. Further, appearance, quality, durability, convenience and environmental friendly attributes of packaging were the important factors that positively influenced consumer's purchase intention and consumption of branded bread. The findings of the previous studies carried out elsewhere supports the results of the present study (Tikkanen and Vääriskoski, 2010; Wyrwa and Barska, 2017; Majid *et al.*, 2018; Jadhav and Chavan, 2019; Hena *et al.*, 2022a).

V. CONCLUSION

The outcome of the present study highlight the role of convenience orientation, time scarcity, cooking skill, sensory appeal, nutritional quality, safety consciousness, health consciousness, perceived price, product information, processing technology and packaging quality on purchase intention and consumption of branded bread. In order to understand the extent of association between aforementioned determinants and purchase intention and consumption of branded bread, confirmatory factor analysis (CFA) and structural equation modelling (SEM) approach were adopted. The results obtained for Cronbach's alpha, factor loading, composite reliability, average variance extracted and correlations estimates demonstrate good internal consistency and reliability of the questionnaire as well as confirmed the convergent and discriminant validity of measurement model. Statistical indices indicate good and acceptable fit of measurement and structural models with data. Standardized estimate / path coefficient (ß) of the structural model demonstrate significant and positive relationship between convenience orientation, time scarcity, lack of cooking skill, sensory appeal, nutritional quality, safety consciousness, health consciousness, perceived price, product information, novel processing technology and packaging quality with consumer's purchase intention and consumption of branded bread. Convenience orientation, health consciousness, product information / labelling and processing technology were the key determinants influencing consumer's purchase intention and consumption of branded bread in an academic environment. The outcome of this comprehensive study indicate that bakery industry should focus more on health attributes, provide true and authentic product information and employ novel processing and packaging technology in order to enhance trust and loyalty amongst the consumer's. Further, government regulatory agencies should implement strict food laws and regulations for production process, quality control, labelling and marketing to provide safe and healthy branded bread to consumers.

ACKNOWLEDGEMENTS

The authors wish to acknowledge all the teaching and non-teaching staff and students across four universities i.e. Haryana Agricultural University, Guru Jambheshwar University of Science and Technology, Lala Lajpat Rai University Veterinary and Animal Sciences and Om Sterling Global University in Hisar, Haryana, India who consented to be part of the survey.

All the data presented in the manuscript were extracted from the thesis "Assessing the role of determinants on consumer's purchase intention and consumption of processed branded bread in an Academic Environment" conducted at the Department of Processing and Food Engineering, Sam Higginbottom University of Agricultural, Technology and Sciences, Prayagraj – 211007 Uttar Pradesh, India.

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APPENDIX I
DESCRIPTION OF THE QUESTIONNAIRE

Section 1	**-**	**Convenience**
CONV 1	-	I prefer branded bread because it is easy to cook / prepare.
CONV 2	-	I prefer branded bread because it requires little physical effort to cook and clean.
CONV 3	-	I prefer branded bread because it is easy to store.
CONV 4	-	I prefer branded bread because its waste disposal is easy.
CONV 5	-	I prefer branded bread because it makes life easier.
Section 2	**-**	**Time scarcity**
TS 1	-	I prefer branded bread due to long working hours.
TS 2	-	I prefer branded bread due to busy life style.
TS 3	-	I prefer branded bread due to busy and hectic work schedule.
TS 4	-	I prefer branded bread due to long commuting distance.
TS 5	-	I prefer branded bread because I am always in rush due to time pressure.
Section 3	**-**	**Cooking skills**
CSK 1	-	I prefer branded bread because I have limited knowledge about cooking.
CSK 2	-	I prefer branded bread because I do not know how to cook food from scratch.
CSK 3	-	I prefer branded bread because I can't match the taste.
CSK 4	-	I prefer branded bread because I did not acquire cooking skills from parents.
Section 4	**-**	**Sensory appeal**
SEN 1	-	I prefer branded bread because it has pleasant appearance.
SEN 2	-	I prefer branded bread because it has good texture.
SEN 3	-	I prefer branded bread because it taste good.
SEN 4	-	I prefer branded bread because it smells nice.
SEN 5	-	I prefer branded bread because it has good flavor.
Section 5	**-**	**Nutritional quality**
QUL 1	-	I prefer branded bread because it is high in mineral content.
QUL 2	-	I prefer branded bread because it is nutritive.
QUL 3	-	I prefer branded bread because it is high in vitamin content.
QUL 4	-	I prefer branded bread because it is in fiber content.

QUL 5	-	I prefer branded bread because it contains natural ingredients.
QUL 6	-	I prefer branded bread because it has necessary quality certification.
Section 6	-	**Safety**
SAF 1	-	I prefer branded bread because it contains no hormones.
SAF 2	-	I prefer branded bread because it does not contain any non-permissible colour.
SAF 3	-	I prefer branded bread because it contains no artificial ingredients.
SAF 4	-	I prefer branded bread because it contains no insecticides.
SAF 5	-	I prefer branded bread because it has safety certification.
Section 7	-	**Health**
HLT 1	-	I prefer branded bread because it has low calories.
HLT 2	-	I prefer branded bread because it has low fat content.
HLT 3	-	I prefer branded bread because it has low salt content.
HLT 4	-	I prefer branded bread because it has low sugar content.
HLT 5	-	I prefer branded bread because it provides a balanced diet.
Section 8	-	**Price**
PRC 1	-	I prefer branded bread because it is not expensive.
PRC 2	-	I prefer branded bread because it is cheaper due to discounted price.
PRC 3	-	I prefer branded bread because it is cheaper due to promotional offer.
PRC 4	-	I prefer branded bread because it is good value for money.
Section 9	-	**Product information**
PIF 1	-	I prefer branded bread due to ingredients printed on packaging.
PIF 2	-	I prefer branded bread due to nutritive value printed on packaging.
PIF 3	-	I prefer branded bread due to additives printed on packaging.
PIF 4	-	I prefer branded bread due to certification printed on packaging..
PIF 5	-	I prefer branded bread due to religious belief printed on packaging..
Section 10	-	**Processing Technology**
PCT 1	-	I prefer branded bread because processing technology follow international standard.
PCT 2	-	I prefer branded bread because food industry uses cutting edge technology.
PCT 3	-	I prefer branded bread because processing technology is environmental friendly.
PCT 4	-	I prefer branded bread because food industry uses natural ingredients.
PCT 5	-	I prefer branded bread because food industry uses high quality ingredients.
Section 11	-	**Packaging**
PKG 1	-	I prefer branded bread due to good quality and appearance of packaging.
PKG 2	-	I prefer branded bread due to convenient shape and size of packaging.
PKG 3	-	I prefer branded bread due to environmental friendly packaging.
PKG 4	-	I prefer branded bread due to advanced packaging technology.
PKG 5	-	I prefer branded bread due to durability of packaging.
Section 12	-	**Purchase Intention**
PI 1	-	I will continue to buy branded bread due to competitive price.
PI 2	-	I will continue to buy branded bread due to lack of cooking skills.
PI 3	-	I will continue to buy branded bread due to time scarcity.
PI 4	-	I will continue to buy branded bread due to good quality, safety and healthiness.
PI 5	-	I will continue to buy branded bread because it is easily available and easy to prepare.
PI 6	-	I will continue to buy branded bread as there are choices available.
PI 7	-	I will continue to buy branded bread to reduce environmental damage.
Section 13	-	**Consumption**
CON 1	-	I consume branded bread due to convenience.

CON 2	-	I consume branded bread due to good taste, smell and appearance.
CON 3	-	I consume branded bread due to attractive packaging.
CON 4	-	I consume branded bread due to competitive price.
CON 5	-	I consume branded bread due to good quality safety and healthiness.
CON 6	-	I consume branded bread due to my religious and ethical beliefs.
CON 7	-	I consume branded bread due to minimum physical effort to cook / prepare.