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AN ANALYSIS OF DETERMINANTS OF CONSUMER DISSATISFACTION TOWARDS PLASTIC PACKAGING CONTAINING READY-TO-EAT AND SERVE MEAL

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ABSTRACT

Packaging is an essential aspect of product and its protection, serving as the first point of interaction for consumers. It encompasses a diverse range of materials and designs, tailored to meet the specific needs of different industries and products. For this study, a total sample of 500 respondents was collected. Data were analyzed by using structural equation modeling technique (SEM). Our analysis suggests that functional value is not found to have significant impact on consumer attitude towards plastic packaging while sensory appeal, food safety concern and social value has significant impact on consumer attitude towards plastic packaging. Results show that consumers are worried about safety of food. Primary purpose of packaging is to keep food protected from spoilage and contamination by elements such as air, light, moisture and pests. Research shows that consumers tend to associate food packaged in non-plastic materials with higher status as compared to food packed in plastic packaging, evoking a premium perception linked to elevated societal class. Consumer perceptions of food packed in plastic packaging are significantly shaped by the social value attributed to packaging materials, influenced by environmental awareness and social status. Sensory appeal plays a crucial role in influencing consumer attitudes towards packaging, especially when it comes to ready-to-eat or ready-to-serve food products. The packaging of a product can have a substantial impact on a consumer's perception of the food's quality, freshness, and overall desirability. The results of our study further show that consumer attitude towards food in plastic packaging has a significant impact on consumer dissatisfaction. The study underscores three key implications: first, marketers should prioritize health-friendly packaging materials for safety, second innovation in packaging should enhance both product protection and sensory appeal, and third, Government intervention is essential to address food safety concern and protect consumers and the food supply chain.

Keywords: Plastic packaging; Ready-to-serve; Consumer attitude; Food safety concern; Dissatisfaction.
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INTRODUCTION

Packaging is quite important in today's business. Packaging is defined by the European Federation as all products made of any material of any sort that is used to hold, preserve, distribute, and present commodities, from raw materials to processed goods. Packaging has long been used to protect and preserve goods as well as to transport, handle, and store them (Hellström & Saghir, 2007). When it comes to purchasing things, packaging is extremely important to consumers. Packaging is critical because it is the first thing that people notice before making a purchase decision. From what we can tell, packaging didn't start like what it is now. The earliest form involved the use of fruit and vegetable skins, hard shells, broad leaves, and animal skins. Packaging made of animal skins, hollowed-out logs, gourds, coconuts, and shells

was used to hold liquids. Packaging made of materials like clay was utilized throughout the Ancient Roman and Egyptian Empires. Glass, metal, and paper were later added to their design and used for packaging. Dr. Robert James first used the branded package in England in the year 1746.

Traceability, tamper indication, and sustainability are additional factors in food packaging that are becoming more and more important (Kotler & Armstrong, 2010). These more recent packing techniques are known as safe packaging. Use of safe packaging extends the product's shelf life while also enhances its quality, safety, and effort to convey information about the product. Protection from physical, biological, and chemical deterioration is provided through packaging. Food is physically protected from mechanical tampering with the use of cushioning against vibrations experienced during distribution and transit (Poli et al., 2023). Also, it lowers the price of the product's marketing and advertising (Abdullahi, 2014). Packaging performs multiple activities and functions that interact with clients, defines the product and its features, and ensures its safety (Silayoi & Speece, 2007). For instance, the product's packaging details the various ingredients. Food is typically packaged to ensure food safety concerns throughout storage, transit, and marketing (Erukainure et al., 2010). Food packaging is crucial because it accomplishes a variety of duties, safeguards food from contamination and deterioration, makes it easier to carry and store food, and maintains uniform measurement of contents (Abdullahi, 2014).

Plastic food packaging is now a common sight in our daily lives. The use of plastic can have detrimental effects on one's health in addition to being harmful for the environment. Reducing our reliance on plastic food packaging will be a crucial step in safeguarding our health as we make progress towards a more sustainable future. In recent years, there has been a growing emphasis on sustainable practices and healthy living. According to Fenton (2020), the impact of plastic food packaging has become a major issue for many people. Plastic is a material that is used nearly invariably in modern life, including food packaging (Rubino et al., 2020). The need for containment is clear for free-flowing items such as liquids, powders, grains, and so on. It is critical for package performance to provide proper confinement and protection. The types and degrees of protection necessary are determined by two key factors: the product's sensitivity and the severity of the situation (Boye & Arcand, 2012).

Food packaging is essential because present food systems would be unable to operate without it. The basic goal of food packaging is to preserve the product it contains, preserving its safety and organoleptic properties (Landim et al., 2016). In this context, conditions encompass not just apparent factors like safety, quality, and nutritional worth, but also factors like appearance that influence consumer acceptance. We rely on packaging to get food from the point of production to the point of consumption. For the consumer who purchase and eat the product, they give much weightage to its qualities like as flavor, color, and scent. Furthermore, the package acts as a barrier against microorganisms as well as unfavorable changes in temperature, light, and moisture, safeguarding the product from microbiological degradation, chemical modifications, and physical changes during transportation and storage (Landim et al., 2016). PC3, Protection, Containment, Communication, and Convenience (PCCC) is an acronym for the packaging functions necessary for a food package system (Aggarwal & Langowski, 2020).

Several environmental and health issues have caused customers to become more aware of their purchases and their impact on their health and the environment over the last decade. However, choosing the right packaging isn't the only thing that ensures a product's shelf life. In reality, aside from identifying the appropriate packaging material, which is critical, the conditions in which the food is stored are also critical(Souza et al., 2017). Packaging is a product's face, and it is typically the only interaction a customer has with it before making a purchase, modernist packaging might include a variety of materials in order to investigate and integrate the practical features of each (Marsh & Bugusu, 2007). Glass, metals, paper, plastics, wood, textiles, and cork are some common materials used in food packaging (Souza et al., 2021). The type of packaging used depends on the product's features, the level of protection necessary, the expected shelf life, the target market, distribution, and the sales circuit (Souza et al., 2017).

Materials for packaging have historically been chosen for their convenience and to prevent unintended contact with food (Rooney et al., 2017). Previous research on packaging has focused on the negative impact of plastic packaging on the environment (Sapozhnikova, 2021), which is undeniable, however, consumer behavior toward determinants of consumer dissatisfaction towards plastic packaging containing ready-to-eat/served food has not been studied. So, this study plans to investigate the determinants of consumer dissatisfaction towards plastic packaging containing ready-to-eat/serve food.

Problem of Statement

The popularity of ready-to-eat and serve foods has skyrocketed in recent years due to reasons including busy schedules, lack of cooking skills, and the desire to eat tastier. There is, however, a rising concern that comes along with this trend: dissatisfaction among consumers with the widespread usage of plastic packaging for these meals. The increasing number of people who are unhappy with the plastic packaging of ready-to-eat meals is a complex problem that is supported by rising health concerns. Researchers have shown that plastic packaging has a negative effect on food it contain and is a major source of plastic pollution (Diana et al., 2022). An additional significant source of health problems is the potential for food stored in plastic containers to absorb harmful substances (Rai et al., 2021). The company's contradictory focus on sustainability and health safety has left customers even more disappointed. More and more, people are looking for packaging options that are better for the food and environment, according to the Sustainable Packaging Coalition (SPC). This preference highlights the critical need of the ready-to-eat food sector tackling these issues and moving towards plastic packaging alternatives. Research also proves that food in plastic packaging is unhealthy for consumers.

Despite this fact we see it is a general practice to serve ready-to-eat/serve food in plastic packaging although people have switched from plastic packaging to alternatives and dislike eating food packed in plastic packaging especially ready to serve food. No comprehensive study is available to understand why people are switching from plastic packaging to alternative packaging. So, this study aims to understand and determine the attitude and behavioral change.

Significance of the Study

The dissatisfaction of consumers with products packed in plastic packaging is an essential subject of research due to the growing awareness of environmental and health concerns and the need for more sustainable business practices. This present research has important implications for both academia and industry. This study tackles an important and topical problem by investigating the elements that lead to customer dissatisfaction. The effects might range from influencing business decisions to influencing consumer preferences, all of which could lead to more sustainable and healthy solutions. Previous research on packaging has focused on the negative impact of plastic packaging on the environment (Sapozhnikova, 2021), which is undeniable, however, consumer behavior toward plastic packaging containing ready-to-eat/served food has not been studied. So, this study plans to investigate the determinants of consumer dissatisfaction towards plastic packaging containing ready-to-eat/serve food.

Conceptual Framework

Social variables may have a significant impact on how an individual behaves and makes choices regarding plastic food packaging. Companies and governments may better understand customer preferences and seek to produce more ecological and socially responsible packaging solutions by being aware of these variables. Certain cultures may place a higher priority on food safety concerns and may favor the use of conventional or natural materials for food storage and packaging. For instance, some cultures prefer to use woven baskets or clay pots to store food over plastic packaging. People may decide not to use plastic food packaging as a result of the popularity of health and wellness trends like clean eating and organic foods. These people might be more aware of the possible health dangers linked to chemical exposure from plastic packaging materials.

Individuals may be influenced by their peers' or social networks' actions. People may be more likely to avoid food in plastic packaging if they have people in their social network who do. According to research in the Journal of Consumer Research, social norms and the actions of people in their social network have an impact on people's decisions about food packaging. The research also revealed that respondents were more inclined to select eco-friendly packaging solutions when they thought that their social network as a whole shared their viewpoint.

According to a Natural Marketing Institute poll, 58% of consumers are willing to pay more for goods that come in environmentally friendly packaging. According to the survey, younger consumers are more likely to take environmental considerations into account when choosing products. So, the following hypothesis is proposed:

H1: Social value has a significant impact on consumer attitude towards food in plastic packaging

Customers' functional values about food that is packaged in plastic are affected by a variety of factors, including convenience, affordability, social, and sustainability. Customers place high importance on convenience when it comes to the functional values, they assign to food that is packaged in plastic. This is because plastic food packaging is simple to store, transport, and portion out. Plastic packaging is often more affordable than other options, which is one additional feature that plays a significant role in the determination of the functional values that consumers place importance on. Additionally, buyers' impressions of food sold in plastic packaging may be affected by status, since certain brands or goods may be linked with luxury or quality. In conclusion, consumers are becoming more concerned about sustainability, and many of them are looking for ecologically responsible solutions that minimize the effect they have. The effect of functional value on consumer satisfaction with food packaging has been examined in previous research. Consumer satisfaction with food packaging was favorably influenced by functional values, including convenience and freshness. Similar findings were made by Pieniak et al. (2013), who discovered that consumers' sentiments toward food packaging were significantly influenced by functional value, which includes protection, convenience, and preservation. Therefore, we propose the following hypothesis:

H2: Functional value has a significant impact on consumer attitude towards food in plastic packaging

Customers' responses to the appearance, color, and feel of food packaged in plastic are affected by a variety of variables, including visibility and accessibility. When it comes to luring in clients, the whole appearance of the goods is of the utmost importance. As a result, the design of packaging and the aesthetics of packaging are crucial concerns for firms. Packaging that is professionally designed and pleasing to the eyes may have a significant influence on how consumers perceive products and the choices they make to purchase them. It has the potential to provide a powerful first impression and communicate the message of the business in an effective manner. In addition, packaging plays an essential part in safeguarding the product and ensuring that it is of the highest possible quality. The consumers' status and their entire experience with the brand are also impacted by the sensory appeal. Companies must make investments in packaging that is both aesthetically pleasing and long-lasting since this directly impacts the image of the brand. When designing packaging, keep in mind both the sensory appeal and the functionality of the product. According to the study, the type of packaging had a big impact on how consumers perceived sensory qualities like texture, sweetness, and sourness. According to the study, plastic wrapping may impair the sensory qualities of fruits and cause consumers to become dissatisfied. Therefore, the following hypothesis also proposed:

H3: Sensory appeal has a significant impact on consumer attitudes towards food in plastic packaging

Food safety concern inside plastic packaging is essential for minimizing the risk of contamination and protecting the health of consumers. Consumers run the danger of eating toxic chemicals or microorganisms if appropriate food safety concern precautions are not implemented. This may result in severe diseases or

even death in certain cases. This will assist in preventing contamination and will guarantee that customers are protected. Additionally, businesses and retailers have a responsibility to do quality control tests and inspections regularly to detect any possible problems or flaws in the materials used for packing. The use of packing materials that are both long-lasting and robust may assist in reducing the likelihood that a product will get damaged while being transported or stored. This has the potential to eventually result in increased levels of customer satisfaction as well as cost savings for the organization. Companies have a responsibility to ensure that decreasing costs does not jeopardize the safety of customers or the quality of the food they provide. Moreover, food storage conditions such as temperature and time should be taken into account (Hotchkiss, 1997). Particularly when the food comes into contact with the packaging material, the interaction between the food and its packaging is an important factor. During this contact, volatile vapors, moisture, microbes, and other low molecular-weight substances are introduced (Djekic & Tomasevic, 2016). Food quality, safety, and/or package integrity may be impacted by this interaction between food and packaging materials, which is regarded as an exchange between food, packaging, and the environment. Food packaging's primary function is to protect food from outside environmental elements, but interactions between food and packaging can also jeopardize food quality and/or safety. The following hypotheses are also proposed:

H4: Food safety concern has a significant impact on consumer attitudes towards food in plastic packaging

H5: Consumer attitude towards food in plastic packaging has a significant impact on consumer dissatisfaction

The model of research is presented in Figure 1.

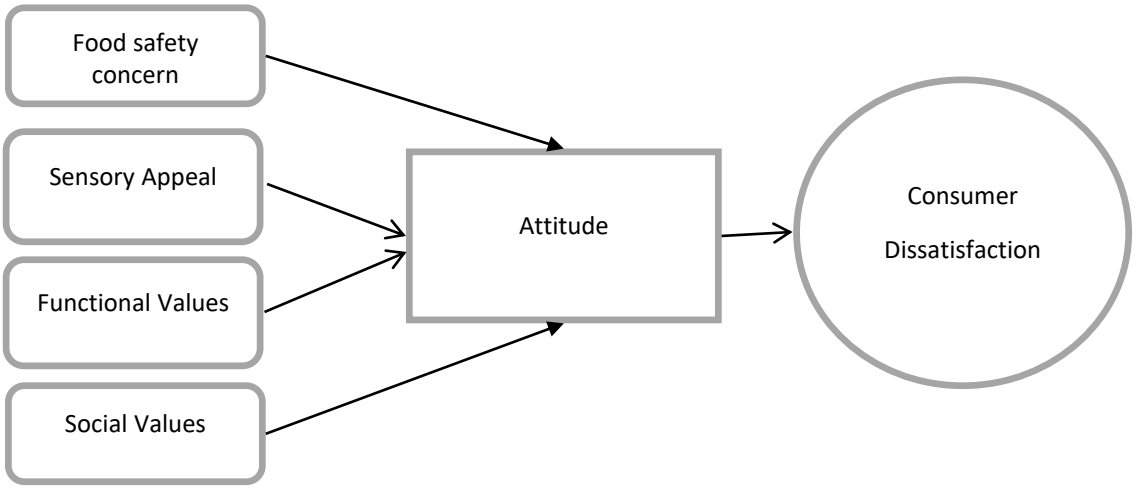

Figure 1. Research Model.

METHODOLOGY

For this purpose, a descriptive study is conducted. Primary data were collected from 500 respondents who avoid food packed in plastic packaging. The purposive sampling technique was used to collect data only from those respondents who avoid plastic packaging. A manipulation check was imposed to filter plastic packaging nonusers from users.

Research Tool

Questionnaire: Data was collected through a questionnaire. A two-part questionnaire was designed, the first section covered demographics and manipulation checks, and the second section contained items

adopted from researchers to analyze our hypotheses. The respondents who failed the manipulation check were not further assessed for the second part of our research.

Measures

Multi-item measures were used to assess the following constructs: four items for purchase dissatisfaction were adopted from Leonidou et al. (2010), items for social value were adopted from Lin and Huang (2012), two items for functional value were adopted from Manget et al. (2009), four items for food safety concern were adopted from De Jonge et al. (2004) and four items for sensory appeal were adopted from Lee and Yun (2015). Respondents were filtered through manipulation check questions before filling out the survey. Measures for gender, income, age, marital status were also included in the questionnaire. For this the researchers used a 7-point Likert scale.

Multi-item measures were used to assess the following constructs: four items for dependent variable (DV) Dissatisfaction were adopted (Leonidou et al., 2010) on a 7-point Likert scale that comprises "Strongly disagree – Strongly agree", items for social value were adopted from Lin and Huang (2012) on a 7-point Likert scale that comprises of "Strongly disagree – Strongly agree", two items for functional value were adopted from Manget et al. (2009)on a 7-point Likert scale that comprises of "Strongly disagree – Strongly agree", four items for food safety concern were adopted from De Jonge et al. (2004) on a 7-point Likert scale that comprises of "Strongly disagree – Strongly agree". Four items for sensory appeal were adopted from Lee and Yun (2015) on a 7-point Likert scale that comprises "Strongly disagree – Strongly agree".

Data Analysis

SPSS was used to analyze the quantitative data that was gathered on the factors that led to customer dissatisfaction with the plastic packaging that contained ready-to-eat or served meals. The goal of this analysis was to discover any noteworthy correlations or trends. A full knowledge of the aspects that lead to customer dissatisfaction with plastic packaging in the context of ready-to-eat or served meals was made possible by the statistical study. In addition, the use of SPSS offered a trustworthy and effective method for the interpretation of the data, which allowed the researchers to arrive at significant findings and give well-informed suggestions for the enhancement of performance in this domain.

AMOS 6.0 was used to examine path analysis and SPSS was used to analyze the quantitative data that was gathered on the factors that led to customer dissatisfaction with the plastic packaging that contained ready-to-eat or served meals.

RESULTS AND DISCUSSION

The quantitative data comprises survey results from a varied sample of customers, whilst the qualitative data is comprised of in-depth interviews with people who have had negative experiences with similar packaging. The focus of this particular context is on customer dissatisfaction. The demographics are given below in Table 1.

Table 1. Demographic of participants.

Demographics		Frequency
Gender	Male	84%
	Female	16%
Education	Higher School	1%
	Graduate	51.40%
	Masters	44.60%
	Doctorate	4%
Age (in years)	15-30	45.90%
	31-45	47.60%
	46-60	6.50%
	Above 60	1%
Income (In Pak Rupees)	25k to 50k	46.40%
	50k to 100k	41.90%

	100k to 150k	10%
	150k Plus	1%

The data was collected from Rahim Yar Khan Pakistan. In the case of gender, male respondents are 84% and female respondents are 16% of the total respondents. Concerning education, 51.4% are graduates while master's and Ph.D. are 44.6% and 4% respectively. The age of the respondents is divided into four groups i.e. 15-30, 30-45, 45-60, and above 60 years. The percentage of respondents that are between 15-30 years is 45.9% and 47.6% of respondents fall between the age of 30-45 years. The percentage of respondents aged between 45 and 60 is 6.5% while 1% of respondents are aged above 60 years. In the section on income, 46.4% of respondents have a monthly income of 25k-50k, 41.9% of respondents have monthly earnings between 50k-100k while there is 10% of respondents have monthly earnings between 100k-150k and only 1% of respondents have monthly earnings above 150k.

Validity and Reliability

All of the variables included in the analysis have high levels of internal consistency, as shown by Cronbach's alpha values which are far above the 0.70 threshold range that supports the reliability of the construct. Convergent validity was established since all factor loadings were larger than 0.5 (Amirrudin et al., 2021). In addition, discriminant validity was evaluated by looking at the correlations between the variables and finding that they were all lower than the 0.85 cutoff suggested by the literature. The study's results provide credence to the reliability and accuracy of the measuring tool used. It was also determined that the inter-variable correlations were much less than the square root of the average variance extracted (AVE) for each construct (Sürücü & Maslakci, 2020). These results provide credence to the reliability and validity of the instruments used in the research (Table 2).

Table 2. Validity and reliability.

Variable	Cronbach's Alpha	Items	Factor Loading
SA	0.957	SA1	0.88
		SA2	0.89
		SA3	0.89
		SA4	0.85
FV	0.839	FV1	0.77
		FV2	0.77
SV	0.913	SV1	0.72
		SV2	0.75
		SV3	0.75
FS	0.919	FS1	0.64
		FS2	0.74
		FS3	0.78
		FS4	0.78
		FS5	0.72
		FS6	0.68
		FS7	0.62
AT	0.894	AT1	0.78
		AT2	0.77
		AT3	0.68
		AT4	0.66
DS	0.92	DS1	0.80
		DS2	0.83
		DS3	0.76
		DS4	0.84

SA =Sensory Appeal; FV= Functional Value; SV= Social Value; FS= Food safety concern; AT= Attitude; DS Dissatisfaction.

Based on the information, it appears that all of the scales used in the study had good to excellent levels of internal consistency reliability.

The Sensory Appeal scale (SA) had the highest reliability with a Cronbach's alpha of .957, indicating that the items on this scale were highly correlated with one another and consistently measured the same construct.

The Food safety concern scale (FS) also had a high level of reliability with a Cronbach's alpha of .919, indicating that the items on this scale were also consistently measuring the same construct.

The other scales i.e. Functional Value (FV), Social Value (SV), Attitude (AT), and Dissatisfaction (DS), all had good levels of internal consistency reliability with Cronbach's alpha coefficients ranging from .839 to .920.

In addition to providing information about the reliability of the scales, we also provided information about the items and factor loadings. The factor loadings indicate the degree to which each item is associated with the underlying construct being measured by the scale. It appears that all of the items had good factor loadings, indicating that they were measuring the intended constructs.

Overall, the reliability and validity of the scales used in this study suggest that the data collected is likely to be reliable and valid, which strengthens the conclusions.

Common Method Bias (CMB)

There is a common technique bias when there is a systematic inaccuracy in data collection or analysis as a result of using the same measuring strategy by several researchers. Inflated correlations or connections between variables may emerge from this bias, making it hard to draw reliable conclusions. Using different ways of data collecting or utilizing statistical approaches like correcting for common method variation may help reduce the effects of common method bias (Aguirre-Urreta & Hu, 2019).

Several methods, both analytical and procedural, have been used for the CMB problem analysis (Kock et al., 2021). Participants were reminded that there is no "wrong" response and that their honest submission of an "acceptable alternative" would result in their comments being anonymously compiled for administrative purposes. The CMB problem was analyzed using Harman's single variable approach. The results showed that 29.565 percent of the differences can be explained, proving the absence of CMB (Hew et al., 2017). This indicates that the participants were given a safe space to share their opinions without worrying about repercussions. There was also no evidence of common method bias, which was consistent with the use of Harman's single variable analysis, suggesting that the CMB problem was evaluated with due diligence. To reduce common method bias we added a cover story to deemphasize any association between the independent and dependent variables, you can reduce a participants' tendency to use previous answers to inform subsequent answers.

Calculated AVE (average extracted variance) is shown in Table 3. The AVE readings are all above the threshold of 0.50. According to Hew et al. (2017), employing the Fornell-Larcker rule that all square roots of AVEs should be greater than their corresponding correlation values demonstrates discriminant validity. The construct's dependability has also been confirmed by attaining Cronbach's Alpha and composite reliability ratings over 0.70. Strong convergent validity of the measurement model was found in this investigation, as shown by the high AVE values. High Cronbach's Alpha and composite reliability ratings further suggest that the model's constructs are trustworthy and consistent.

Table 3. AVE values of factors.

AVE values	DS	FV	SV	SA	FS	AT	AVE	CR	R
DS	0.88						0.776	0.933	0.485
FV	0.308	0.777					0.604	0.753	
SV	0.414	0.619	0.744				0.555	0.789	
SA	0.343	0530	0.622	0.743			0.553	0.830	

FS	0.671	0.543	0.660	0.443	0.716		0.513	0.880
AT	0.630	0.525	0.634	0.397	0.837	0.728	0.531	0.887

Diagonal values are the sq-root of AVE; DS=Dissatisfaction; FV= Functional Value; SV=Social Value; FS=Food Safety, AT=Attitude; AVE= average variance explained; CR=composite reliability.

In Table 3, the AVE values of DS, FV, SV, SA and AT are acceptable as they are greater than 0.5. The composite reliability is greater than 0.6 and the construct's convergent validity is acceptable. According to the research of Anderson and Gerbing (1988), convergent and discriminant validity were used in the development of the path analysis. The present investigation used structural equation modeling to quantify AMOS values. This research differs from others in that it relied on structural regression to test its assumptions. SEM's main benefit is that it can correct measurement errors inside a statistical framework, which is something that multiple regressions can't achieve.

Table 4. Model fit.

Model	RMSEA	CMIN/DF	CFI	NFI
Default model	.07	3.182	.940	.956
Independence Model	.280	32.446	.000	.000

AMOS's primary goal is to assess how well a given structural equation model fits the data (SEM). In structural equation modeling (SEM), model fit is used to determine whether or not the hypothesized model adequately explains the data. Many fit indices, such as CMIN/DF, CFI, NFI, and RMSEA, were used to evaluate the quality of the model fit, as shown in Table 4. According to Kline (1998), a satisfactory match between the hypothesized structural model and the actual data is achieved when the CMIN/DF number is less than 3. Both the CFI (0.984) and NFI (0.898) values are above the threshold of 0.90, indicating an excellent match. The RMSEA value of 0.105 also indicates a passable fit, since it is within the acceptable range of 0.10 and 0.15.

Path Analysis

In structural equation modeling (SEM), a statistical metric called the route coefficient indirect impact is used to evaluate the indirect link that exists between two variables. It provides a numerical measure of the degree to which one or more intermediate variables moderate the influence of a single independent variable on a single dependent variable. Researchers are able to identify the degree and relevance of these indirect effects by evaluating the path coefficients, which provides them with significant insights into the underlying mechanisms and processes at play.

Table 5. Hypotheses.

Hypothesis			Estimate	S.E.	C.R.	P
AT	<---	SA	.070	.035	1.977	.048
AT	<---	FV	.026	.041	.636	.525
AT	<---	SV	.261	.046	5.664	***
AT	<---	FS	.119	.031	3.845	***
DS	<---	AT	.744	.100	7.475	***

The Table 5 shows the estimates, standard errors (S.E.), critical ratios (C.R.), and p-values for the paths between the variables.

The first four paths show the relationships between the predictor variables (SA, FV, SV, and FS) and the outcome variable (AT). The estimates represent the strength and direction of the relationship, while the standard errors and critical ratios provide information about the statistical significance of the estimates. This suggests that there is a significant positive relationship between food safety concern and consumer attitudes toward food in plastic packaging.

For the first hypothesis (H1), the path between SA and AT has a significant relationship (β=.070, p=0.04).This suggests that there is a significant positive relationship between sensory appeal and consumer attitude towards food in plastic packaging.

For the second hypothesis (H2), the path between FV and AT has an insignificant relationship (β=.026, p=.525).This suggests that there is no significant relationship between functional value and consumer attitude towards food in plastic packaging.

For the third hypothesis (H3), the path between SV and AT has a significant relationship (β=.261, p<.001). This suggests that there is a significant positive relationship between social value and consumer attitude towards food in plastic packaging.

For the fourth hypothesis (H4), the path between FS and AT has a significant relationship (β=.119, p<.001). This suggests that there is a significant positive relationship between food safety concern and consumer attitudes toward food in plastic packaging.

Finally, for the fifth hypothesis (H5), the path between AT and DS has a significant relationship (β=.744, p<.001).

Overall, the results of the path analysis support four of the five hypotheses, suggesting that food safety concern, social value, sensory appeal, and attitude are important factors in shaping consumer attitudes towards plastic packaging containing ready-to-eat food and that consumer attitude is an important predictor of dissatisfaction towards ready-to-eat food.

The results show that FV has an insignificant impact on AT. Hence, hypothesis 2 has been disapproved.

SA, SV, and FS have a significant impact on AT, and the final impact of AT on DS is also significant. Hence, hypotheses 1, 3, 4 and 5 have been approved

Table 6. Hypothesis testing results.

Hypothesis	Paths	Results
H1	AT <---- SA	Approved
H2	AT <---- FV	Disapproved
H3	AT <---- SV	Approve
H4	AT <---- FS	Approved
H5	DS <---- AT	Approved

The results indicate that H1, H3, H4, and H5 were approved, while H2 was disapproved. This means that food safety concerns, social value, sensory appeal, and consumer attitude towards plastic packaging containing ready-to-eat/served food had a significant impact on consumer dissatisfaction towards ready-to-eat/serve food. However, the functional value did not have a significant impact on consumer attitudes towards food in plastic packaging (Table 6).

Discussion

The study was designed to assess factors that can develop consumer dissatisfaction with food in plastic packaging. The study analyzed different factors that play a role in consumer dissatisfaction with food in plastic packaging. Food safety concern has a significant impact on consumer attitudes toward food packed in plastic packaging. Food packaging is used for a wide variety of goods, and the safety of the food is dependent on the packaging along the supply chain (Brody et al., 2008; Robertson, 2006). Consumers may get a feel for the product and its qualities through the packaging, which influences their decision to buy or not.

The primary purpose of food packaging is to keep food secure from spoilage and contamination by elements such as air, light, moisture, and pests (Lee et al., 2010).

The assumption that customers are constantly worried about the safety of food is supported by previous research and literature. Customers often express concerns over chemical substances and a strong desire to purchase goods that are free from chemicals (Jolly et al., 1989). People are more conscious than ever about the foods they consume and the packaging they come in. For this reason, we contend that worries about the safety of food are the primary motivating factors for attitudes toward food in plastic packaging.

Certain chemicals used in plastic production such as plasticizers, stabilizers, and colorants, have the potential to migrate from the packaging into the food. This migration can be influenced by factors like temperature, contact duration, and the type of food (Hahladakis et al., 2018).

Consumer opinions about plastic packaging holding ready-to-eat or served food have been shown in line with Jolly et al. (1989) to be significantly influenced by concerns around food safety concern. This result underscores that food safety concern, driven by worries about chemical migration from plastic packaging and contamination, significantly influence consumer attitudes toward food in such packaging.

The results of our study show that functional value has an insignificant impact on consumer attitude towards ready to eat/serve food. Our finding contradicts that of previous research, but it still sheds light on what influences consumers' decisions. This raises the possibility that factors that were overlooked in the original study are still at play. Culture and preference are two examples of such elements. As a developing nation, everything about our culture, preferences, social standing, and natural environment is different from that of more developed nations. Therefore, future studies should take these factors into account.

We assess functional value from three aspects convenience, freshness, and reusability. Although packaging is done to provide convenience and ensure freshness, plastic packaging fails to provide both two qualities. Plastics do not provide an effective barrier to oxygen, moisture, and other gases. This can lead to a process known as oxidation, which can cause foods to become stale, rancid, or lose their flavor. Apart from these two disadvantages, another disadvantage of Plastic packaging is that it cannot be reused multiple times as a cotton bag and decompose as paper.

Although other packaging materials are more food and consumer-friendly, ensure quality and freshness but are expensive to afford. Economic constraints might lead people to options for less expensive options even if they are not as fresh (Daniel, 2020).

Pakistan is a developing country. Poverty in Pakistan has been recorded by the World Bank at 39.3% using the lower middle-income poverty rate of US$3.2 per day, and 78.4% using the upper middle-income poverty rate of US$5.5 per day, for the fiscal year 2020–21.

Where people prefer affordability to convenience and freshness, plastic packaging is far cheaper than alternative packaging materials like metal, glass, or wood (Marsh & Bugusu, 2007). The study's findings reveal that functional value has a negligible impact on consumer attitudes toward ready-to-eat/serve food, contrary to prior research. This discrepancy suggests the influence of overlooked factors such as culture and preference, particularly relevant in a developing nation like Pakistan, where economic constraints often prompt affordability to outweigh convenience and freshness concerns.

Social value has a significant impact on consumer attitudes towards ready to eat/serve food. People are becoming more conscious about packaging material, particularly in public spaces.

Consumer opinions regarding food packed in plastic packaging are significantly influenced by the social value of food packaging. Sales of many different kinds of successful items are driven by their social worth (Jacobsen et al., 2022).

Many people have become more aware of the negative impact of plastic on the environment. Plastic waste can take hundreds of years to decompose, and it can harm wildlife and pollute ecosystems (Barnes et al., 2009). This awareness has led to a desire to reduce plastic consumption publicly. Some regions have

implemented bans or restrictions on single-use plastics, such as plastic bags, straws, and utensils. These regulations have encouraged individuals to seek alternatives and reduce their plastic usage (Heide & Olsen, 2018). In actuality, people's desire to own things that could serve as symbolic identifiers of group membership is frequently connected to social worth (Heide & Olsen, 2018; Lee et al., 2010).

In some societies, especially those with a growing awareness of environmental issues, avoiding the use of single-use plastic bags could be seen as a sign of social responsibility and higher status.Glass, tin, and wood packaging is often associated with higher quality and a more premium feel (Schifferstein et al., 2021).

Research suggests that consumers tend to associate food packaged in non-plastic materials with higher status, evoking a premium perception linked to elevated societal class. This phenomenon highlights the sociocultural impact of packaging choices on consumer perceptions (Boz & Koelsch Sand, 2020).Consumer perceptions of food packed in plastic packaging are significantly shaped by the social value attributed to packaging materials, influenced by environmental awareness and social status

Sensory appeal has a significant impact on consumer attitudes towards food in plastic packaging. The use of plastic packaging for food may have a detrimental effect on the product's sensory appeal and result in dissatisfied customers. Sensory appeal plays a crucial role in influencing consumer attitudes towards packaging, especially when it comes to ready-to-eat or ready-to-serve food products. The packaging of a product can have a substantial impact on a consumer's perception of the food's quality, freshness, and overall desirability (Van Esch et al., 2019).

The visual appearance of the packaging can create a first impression. Consumers often associate visually appealing packaging with high-quality, fresh, and delicious food. Bright colors, appetizing images of the food, and clean design can attract attention and make the product look more enticing (Vermeir et al., 2020).

A well-designed package can help contain the aroma of the food. Even though consumers can't physically smell the product through the packaging, the packaging materials can be chosen or designed to preserve the product's aroma. This can contribute to the overall anticipation and desire for the food (Spence, 2015).

Certain types of plastic packaging can interact with the food and lead to the migration of odors and flavors (Alamri et al., 2021).This can result in altered taste and aroma, which may deviate from the natural characteristics of the food. Consumers often associate specific smells and tastes with freshness and quality, so any deviation can lead to dissatisfaction. Our hypotheses results are in line with the literature that sensory appeal has a significant impact on consumer attitudes toward food in plastic packaging.

CONCLUSIONS AND IMPLICATIONS

The findings of the study suggest that consumers place a high value on food safety concerns when it comes to consumer attitudes toward food in plastic packaging. This highlights the importance of ensuring that food safety concern is prioritized in the production and packaging of such food products. Additionally, the study found that consumers consider the social value and sensory aspects of the packaging, which suggests that manufacturers should also consider these factors when designing and producing packaging for food in plastic. Companies need to design packaging that is consumer and environment-friendly. These kinds of products increase the sensory appeal and maximum feel which gives the satisfaction of customers. However, this study did not find a significant impact of functional value on consumer attitude towards food in plastic packaging. This suggests that consumers do not place as much value on the functional aspects of the packaging, such as its ability to keep the food fresh, its convenience, and its reusability, as they do on the food safety concern, social value, and sensory aspects of the packaging. The findings suggest that manufacturers should prioritize food safety concerns, social value, and sensory appeal in the design and production of such packaging. The study also highlights the importance of considering consumer attitudes towards packaging in relation to their dissatisfaction towards food in plastic. Overall, this study adds to the body of research literature on packaging and consumer behavior and provides important implications for

both manufacturers and policymakers in the food industry. In conclusion, this research contributes to knowledge of the factors that contribute to consumers' dissatisfaction with food in plastic packaging. This study's findings may help the food sector improve its packaging methods. This research adds to the growing body of literature on the topic of food in plastic packaging by highlighting the importance of considering consumer preferences when making packaging choices.

The study highlights three key implications for the industry and government. Firstly, marketers should prioritize the development of health-friendly packaging materials to address safety concerns. Secondly, there is a need for marketers to innovate packaging solutions that not only protect products but also enhance their sensory appeal to consumers. Lastly, government intervention is crucial in addressing and improving food safety concerns, ensuring the well-being of consumers and the overall integrity of the food supply chain.

Limitation of Study

This study includes a dataset of only those who avoid food packed in plastic packing, potentially limiting wider relevance. Generalizing the findings is restricted due to narrow scope and localized context. Emphasizing behavioral intentions over actions, the study might not fully reflect real-world behavior. Additionally, affordability's role is acknowledged but not thoroughly explored. In essence, while offering insights, these limitations highlight the importance of diverse data, broader contexts, bridging intention-behavior gaps, and deeper affordability analysis in future research.

REFERENCES

Abdullahi, N. (2014). Hazard chemicals in some food packaging materials (a review). Annual Food Scienceand Technology, 15(1), 115-120.

Aggarwal, A., & Langowski, H. C. (2020). Packaging functions and their role in technical development of food packaging systems: Functional equivalence in yoghurt packaging. Procedia CIRP, 90, 405-410.

Aguirre-Urreta, M. I., & Hu, J. (2019). Detecting common method bias: Performance of the Harman's single-factor test. ACM SIGMIS Database: the database for Advances in Information Systems, 50(2), 45-70.

Alamri, M., Qasem, A. A., Mohamed, A. A., Hussain, S., Ibraheem, M. A., Shamlan, G., Alqah, H. A., &Qasha, A. S. (2021). Food packaging's materials: A food safety perspective. Saudi Journal of Biological Sciences, 28(8), 4490-4499.

Amirrudin, M., Nasution, K., &Supahar, S. (2021). Effect of variability on Cronbach alpha reliability in research practice. JurnalMatematika, Statistika dan Komputasi, 17(2), 223-230.

Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. Psychological Bulletin, 103(3), 411.

Barnes, D. K., Galgani, F., Thompson, R. C., &Barlaz, M. (2009). Accumulation and fragmentation of plastic debris in global environments. Philosophical transactions of the royal society B: Biological Sciences, 364(1526), 1985-1998.

Boye, J., & Arcand, Y. (Eds.). (2012). Green technologies in food production and processing. Springer Science & Business Media.

Boz, Z., & Koelsch Sand, C. (2020). A systematic analysis of the overall nutritional contribution of food loss and waste in tomatoes, spinach, and kidney beans as a function of processing. Journal of Food Process Engineering, 43(11), e13509.

Brody, A. L., Bugusu, B., Han, J. H., Sand, C. K., & McHugh, T. H. (2008). Innovative food packaging solutions. Journal of Food Science, 73(8), 107-116.

Daniel, C. (2020). Is healthy eating too expensive?: How low-income parents evaluate the cost of food. Social Science & Medicine, 248, 112823.

De Jonge, J., Frewer, L., Van Trijp, H., Jan Renes, R., De Wit, W., & Timmers, J. (2004). Monitoring consumer confidence in food safety: an exploratory study. British Food Journal, 106(10/11), 837-849.

Diana, Z., Karasik, R., Merrill, G. B., Morrison, M., Corcoran, K. A., Vermeer, D., Hepler-Smith, E., Jayasundara, N., Pare, J., & Virdin, J. (2022). A transdisciplinary approach to reducing global plastic pollution. Frontiers in Marine Science, 9, 1032381.

Djekic, I., & Tomasevic, I. (2016). Environmental impacts of the meat chain–Current status and future perspectives. Trends in Food Science & Technology, 54, 94-102.

Erukainure, O., Egagah, T., Bolaji, P., & Ajiboye, A. (2010). Development and quality assessment of date chocolate products. American Journal of Food Technology, 5(5), 324-330.

Hahladakis, J. N., Velis, C. A., Weber, R., Iacovidou, E., & Purnell, P. (2018). An overview of chemical additives present in plastics: Migration, release, fate and environmental impact during their use, disposal and recycling. Journal of Hazardous Materials, 344, 179-199.

Heide, M., & Olsen, S. O. (2018). The use of food quality and prestige-based benefits for consumer segmentation. British Food Journal, 120(10), 2349-2363.

Hellström, D., & Saghir, M. (2007). Packaging and logistics interactions in retail supply chains. Packaging Technology and Science: An International Journal, 20(3), 197-216.

Hew, T.S., Syed A., & Kadir, S. L. (2017). Applying channel expansion and self-determination theory in predicting use behaviour of cloud-based VLE. Behaviour& Information Technology, 36(9), 875-896.

Hotchkiss, J. H. (1997). Food-packaging interactions influencing quality and safety. Food Additives & Contaminants, 14(6-7), 601-607.

Jacobsen, L. F., Pedersen, S., & Thøgersen, J. (2022). Drivers of and barriers to consumers' plastic packaging waste avoidance and recycling–A systematic literature review. Waste Management, 141, 63-78.

Jolly, D. A., Schutz, H. G., Diaz-Knauf, K. V., & Johal, J. (1989). Organic foods: consumer attitudes and use. Food Technology (Chicago), 43(11), 60-66.

Kline, R. B. (1998). Structural equation modeling. New York: Guilford, 33.

Kock, F., Berbekova, A., & Assaf, A. G. (2021). Understanding and managing the threat of common method bias: Detection, prevention and control. Tourism Management, 86, 104330.

Kotler, P., & Armstrong, G. M. (2010). Principles of marketing. Pearson Education India.

Landim, A. P. M., Bernardo, C. O., Martins, I. B. A., Francisco, M. R., Santos, M. B., & Melo, N. R. (2016). Sustentabilidadequantoàsembalagens de alimentos no Brasil. Polímeros, 26, 82-92.

Lee, B.-J., Kim, J.-S., Kang, Y. M., Lim, J.-H., Kim, Y.-M., Lee, M.-S., Jeong, M.-H., Ahn, C.-B., & Je, J.-Y. (2010). Antioxidant activity and γ-aminobutyric acid (GABA) content in sea tangle fermented by Lactobacillus brevis BJ20 isolated from traditional fermented foods. Food Chemistry, 122(1), 271-276.

Lee, H.-J., & Yun, Z.-S. (2015). Consumers' perceptions of organic food attributes and cognitive and affective attitudes as determinants of their purchase intentions toward organic food. Food quality and Preference, 39, 259-267.

Leonidou, L. C., Leonidou, C. N., &Kvasova, O. (2010). Antecedents and outcomes of consumer environmentally friendly attitudes and behaviour. Journal of Marketing Management, 26(13-14), 1319-1344.

Lin, P.C., & Huang, Y.-H. (2012). The influence factors on choice behavior regarding green products based on the theory of consumption values. Journal of Cleaner Production, 22(1), 11-18.

Liu, R., Pieniak, Z., & Verbeke, W. (2013). Consumers' attitudes and behaviour towards safe food in China: A review. Food Control, 33(1), 93-104.

Manget, J., Roche, C., & Münnich, F. (2009). Capturing the green advantage for consumer companies (online). Boston: The Boston Consulting Group.

Marsh, K., &Bugusu, B. (2007). Food packaging—roles, materials, and environmental issues. Journal of Food science, 72(3), R39-R55.

Marsh, K., &Bugusu, B. (2007). Food packaging—roles, materials, and environmental issues. Journal of Food Science, 72(3), R39-R55.

Poli, M., Malagas, K., Nomikos, S., Papapostolou, A., & Vlassas, G. (2023). An Overview of the Impact of the Food Sector "Intelligent Packaging" and "Smart Packaging". European Journal of Interdisciplinary Studies, 15(1), 120-134.

Rai, P. K., Lee, J., Brown, R. J., & Kim, K.-H. (2021). Environmental fate, ecotoxicity biomarkers, and potential health effects of micro-and nano-scale plastic contamination. Journal of Hazardous Materials, 403, 123910.

Robertson, G. (2006). Safety and legislative aspects of packaging. Food Packaging Principle and Practice, 3, 473-502.

Rooney, C., McKinley, M. C., Appleton, K. M., Young, I. S., McGrath, A. J., Draffin, C. R., Hamill, L. L., & Woodside, J. V. (2017). How much is '5-a-day'? A qualitative investigation into consumer understanding of fruit and vegetable intake guidelines. Journal of Human Nutrition and Dietetics, 30(1), 105-113.

Rubino, A., Sanon, M., Ganz, M. L., Simpson, A., Fenton, M. C., Verma, S., Hartry, A., Baker, R. A., Duffy, R. A., & Gwin, K. (2020). Association of the US Food and Drug Administration antipsychotic drug boxed warning with medication use and health outcomes in elderly patients with dementia. JAMA Network Open, 3(4), e203630-e203630.

Sapozhnikova, Y. (2021). Non-targeted screening of chemicals migrating from paper-based food packaging by GC-Orbitrap mass spectrometry. Talanta, 226, 122120.

Schifferstein, H. N., de Boer, A., & Lemke, M. (2021). Conveying information through food packaging: A literature review comparing legislation with consumer perception. Journal of Functional Foods, 86, 104734.

Silayoi, P., & Speece, M. (2007). The importance of packaging attributes: A conjoint analysis approach. European Journal of Marketing, 41(11/12), 1495-1517.

Souza, A. G., Ferreira, R. R., Paula, L. C., Mitra, S. K., & Rosa, D. S. (2021). Starch-based films enriched with nanocellulose-stabilized Pickering emulsions containing different essential oils for possible applications in food packaging. Food Packaging and Shelf Life, 27, 100615.

Souza, L. B. d., Moura, A. A. C., & Silva, J. B. A. d. (2017). Embalagens para alimentos: Tendências e inovações. Hig. Aliment, 25-29.

Spence, C. (2015). Multisensory flavor perception. Cell, 161(1), 24-35.

Sürücü, L., &Maslakci, A. (2020). Validity and reliability in quantitative research. Business & Management Studies: An International Journal, 8(3), 2694-2726.

Van Esch, P., Heller, J., & Northey, G. (2019). The effects of inner packaging color on the desirability of food. Journal of Retailing and Consumer Services, 50, 94-102.

Vermeir, I., Weijters, B., De Houwer, J., Geuens, M., Slabbinck, H., Spruyt, A., Van Kerckhove, A., Van Lippevelde, W., De Steur, H., & Verbeke, W. (2020). Environmentally sustainable food consumption: A review and research agenda from a goal-directed perspective. Frontiers in Psychology, 11, 1603.