Research paper

Factors Affecting Purchase Decision of Canned Tuna Brands in Maldives

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Abstract

This study aimed to identify factors affecting purchase decision of canned tuna brands in the Maldives. Consumer decision making behaviour theories, models and past literature was reviewed to recognize various factors that affect purchase decision, followed by generating a multi-factor questionnaire with a Likert-Scale from 1-5 which helped conduct a pilot test to select most appropriate variables for this study. Theoretical framework was developed consisting of five major independent variables; social factors, product characteristics, company characteristics, marketing activities and Psychological factors. Data was collected using convenient sampling from a total of 450 customers visiting four of the largest supermarkets in Male’, the capital city of Maldives to ensure the reliability and validity of the research. The collected data was analyzed using statistical software’s AMOS 22. Confirmatory Factor analysis was used to confirm the factors that loads on each component and “Psychological factor” was removed from the original construct to meet the standard loading. Structural Equation Modeling was then performed to examine the path analysis and to test the hypotheses. Results indicated product characteristics to have a positive significant impact on consumer’s purchase decision. However, social factors, company characteristics and marketing activities were found to have no significance on purchase decision. Furthermore, demographic characters were analyzed for its significance; females, housewives and entrepreneurs were determined to specifically have a stronger purchase intention. Therefore, product characteristics of canned tuna such as taste, packaging and nutrition are most important factors that have a strong influence on consumers purchase decision of canned tuna brands in Maldives. This study included only consumers in Male’, hence further studies may include other regions of the country, especially the populated atolls. Future researches may also aim on deeper perspective of product characteristics such as impact of various canned tuna flavors; tuna in sunflower oil, tuna in olive oil or brine. As well discovering impact of various labelling or brand characters that influence consumers purchase decision would be resourceful to canned tuna producers and marketers.

Key Terms: Consumer Behaviour, Purchase Decision, Purchase Intention
1. **Introduction**

Having the knowledge of the factors affecting purchase decisions of a product have a competitive advantage to formulate the most appropriate marketing strategy, advertising campaign and product characteristics that are more in line with what consumers are seeking. Resulting in having the consumers’ expectations met better and increasing the satisfaction (Solomon et al, 2006). Hence, this research is conducted to identify the factors that affect purchase decision of canned tuna brands in Maldives.

**Contextual Background**

The Republic of Maldives is a sovereign archipelagic nation of 26 natural atolls positioned in Indian Ocean with a total of 1190 tropical coral reef islands known for its beautiful white sandy beaches, blue lagoons and extensive reefs. While 95% of the country consists of water, the abundance of this natural resource accounts majorly to its economy by tourism and fisheries. Tourism is the largest sector in the livelihood of the people and fisheries is the second leading contributor accounting to about more than 15% of the country’s Gross Domestic Product (GDP) (Visit Maldives, 2015).

Habitually, tuna is included in all three meals of most Maldivians diet and around 20-30% of the country’s catch is consumed locally while the rest is exported either as frozen, fresh, chilled or canned. Local consumption also includes tourists visiting the country which is more than a million people annually (Ministry of Tourism, 2015).

Over the years, fisheries industry has been developing steadily in Maldives with increase in catch and tuna is considered to be the most important species comprising around 70% of the industry’s total catch. The rapid growth resulted in establishment of freezing facilities, canning plants and production of wide range of tuna products in the early 1970s (Solah, 2007).

While Maldivian canned tuna holds a good reputation for their brands abroad, there are several brands available in the shelves of the local super markets. There are mainly two canned tuna producers in Maldives, MIFCO and Horizon Fisheries Maldives. MIFCO is a state-run corporate enterprise with their well-known can brand “Fasmeeru” which has been in existence for over 28 years (MIFCO, 2015). Horizon Fisheries Maldives” was incorporated in the year 2003 which is a private company with their brand “Rahameeru” (HorizonFisheries, 2015). With the intense growth in demand for canned tuna and price sensitivity among consumers, local food importers commenced importing several other brands from origins such as Thailand which are of much cheaper price compared to the local production. This has been a huge concern for the local producers, however the purchasing trend of consumers, their preference and awareness was enigmatic. Marketers observed consumers who strictly wanted to persist their loyalty to the oldest local brands, influential advertisements of newly introduced import brands performing well and consumers who preferred whichever brand was most economical (Hassan, 2015).

Hence, this study was conducted mostly based in view of findings from researches of other countries for similar products despite the few differences in culture and social factors. Furthermore, this study will be a contribution to fisheries companies in Maldives with a better insight of the customer perceived value, guiding them to develop successful marketing strategies, create new customers as well keep the existing ones.
Research Background

Previously, most researches conducted on factors affecting consumer purchasing behaviour towards were various products includes seafood, organic food smartphones, coffee brands, private labels, clothing, luxury items which are based in context of UK, USA and parts of European countries (Nevin, 2003, Anna & Lambros, 2011). Few studies are also being done studying consumers perception of various products in parts of Asia including Malaysia, China, Indonesia, India, Sri Lanka and Bangladesh (Reaz, Nusrat & Oheduzzaman, 2014, karunia, Zaenal & Suroto, 2013).

In UK, Ceare Nevin conducted a study in 2003 to understand the preference and perception of consumers towards seafood products and found out that quality was the most influential factor for the consumers from upper social class, while middle class chose fish as per their convenience (Nevin, 2003). Jay Dickieson & Victoria Arkus did a study on “Factors that influence the purchase of organic food: A study of consumer behaviour in the UK” and found out consumer behaviour is influenced by health consciousness, concern over food safety, perceived quality, price premium and trust in organic labelling (Jay & Victoria, 2009).

Verbeke and Vackier investigated fish consumption behaviour in Belgium using Theory of planned behaviour and found out that consumption was higher among woman compared to men as well consumers with lower income and age consumed comparably less (Verbeke & Vackier, 2005). Anna Kourtroulo and Lambros Tsourgiannis studied “Factors affecting consumers’ purchasing behaviour towards local food in Greece and indicated there was a significant association between buying behaviour and the variables; quality, price, health issues, packaging, freshness, taste, production method, curiosity and prestige (Anna & Lambros, 2011).

Thu Ha Nguyen & Ayda Gizaw studied “Factors that influence consumer purchasing decision of private label food products” in Sweden using primary and secondary data in the year 2014. The study showed that price and quality of the product influences purchase intention most strongly while brand related factors such as advertisements, word of mouth, brand perception and brand familiarity (Production company’s reputation, experience, expertise, reliability, capability, resources and trust) as well consumers perception, attitude, intention and demographic factors do have significance. The study further identified that dissatisfaction with a product leads to perceived risk and negative impact on intention while females and low-income consumers buy more private labelled products compared to males and high-income consumers (Thu Ha & Ayda, 2014). Monika Kavaliauske and Simona Ubartaite studied “Ethical behaviour: Factors influencing intention to buy organic products in Lithuania indicating that consumer ethics have the greatest influence to purchase intention, followed by health concerns, price, product compositions/ nutrition (Monika & Simona, 2014).

Karunia Setyowati Suroto, Zaenal Fanani and Bambang Ali Nugroho studied ‘Factors influencing consumers’ purchase decision of formula milk in Malang City with results showing all of the tested variables except price having positive influence on choice of formula milk and cultural factors (Religion, occupation, education, income) taken in to account been the most dominant factors (Karunia, Zaenal & Suroto, 2013). MD Reaz Uddin, Nusrath Zahan Lopa and MD. Oheduzzaman conducted a study of “Factors affecting customers buying decision of mobile phone: A study on Khulna City, Bangladesh The results showed that physical features of the mobile phone has the
strongest influence on purchase decision while; pricing, charging and operating facilities, size and weight, friends, colleagues, neighbours recommendation and advertising also do have a significant impact on consumers choice (Reaz, Nusrath & Oheduzzaman, 2014).

A study in Taiwan signified that consumers who preferred to consume fish and specifically seafood such as shrimp were office workers with higher income and knowledge of the products nutrition seeking for quality products with better taste (Houston & Li, 2000). An exploration conducted in China to understand consumers’ willingness to purchase eco-labelled seafood results showed that the product information provided on the label were more crucial than the consumers post purchase experience and that the purchase intention was positively related to consumers’ qualification, gender, store location, awareness of the product and their budget (Xu et al, 2012).

Pethiyagoda and Olsens' examined fish consumption behaviour in Srilanka and indicated that there is a positive relationship between consumers’ attitude and fish consumption while there is no significance to consumption with product knowledge, price and the consumption frequency (Pethiyagoda & Olsen, 2012).

Few of the similar research conducted in Maldives includes the study by Mihna and Behrooz identifying determinants of internet banking with results stating that effort expectancy, trust and social influence have a significant impact on consumers purchase intention (Mihna & Behrooz, 2015). A second study was on customer-based brand equity resulting in positive relationship with perceived quality, brand association and brand awareness (Adam et al, 2012). However, canned tuna is a daily life consumable for which consumers make routine decisions and the nature of the study product for these study was very different from canned tuna, accentuating the importance of this study. To achieve this, following objectives were formulated.

✔ To determine whether social factors influence purchase decision of canned tuna brands in Maldives.
✔ To determine whether product characteristics influence purchase decision of canned tuna brands in Maldives.
✔ To determine whether characteristics of production company influence purchase decision of canned tuna brands in Maldives.
✔ To determine whether marketing activities influence purchase decision of canned tuna brands in Maldives.
✔ To determine whether psychological factors affect purchase decision of canned tuna brands in Maldives.
✔ To determine whether demographic factors affect purchase decision of canned tuna brand in Maldives.

2. Literature Review

Referring consumer as an individual, Walters defines “behaviour” in the set “consumer behaviour” as “the process in which individual interacts with his/her environment.
Consumer behaviour is a process in which an individual decides whether, what, where, how and when and from whom he/she purchase goods and services" (Walters, 1974). It composes of individual thoughts, actions and feelings, which consequence in their day to day decisions elucidating human behavior (Belch & Belch, 2001). It is “a study of an exchange process of goods combined with obtaining, consuming and disposing of the goods, services and experiences” (Hoyer & Maclnnis, 2004).

Decision and behaviour are the core of the decision making phenomena, while decisions are associated in everything we do, there is an overwhelming number of theories and related researches done and continues to evolve to address the rapidly changing human behaviour. Theory of reasoned action was developed by Martin Fishbein and Icek Ajzen in the year 1967 in persuasion of psychology and theory of attitude. The basic aim of the theory is to explain the relationship between attitude and behaviours within human actions, as a basis for an individual’s decision to engage in an activity in consideration of expected outcomes (Ajzen & Fishbein, 198; Colman, 2015). TRA serves to understand a persons’ voluntary behaviour and does not represent habitual behaviour. This theory has been tested with habitual behaviour such as smoking where the subjective norm is negative however the consumers do still have the intention to this behaviour, hence the attitudinal and normative components are conceptually not distinct. (Doswell et al, 2011).

Andreason’s consumer behaviour model starts with various attributes of needs, further it relates influences to buyer decision such as personality, belief and attitude at the stage of information search. At the point of decision making, constrains such as budget, income, priority factors are put for determination of a final call to make purchase decision (Andreason, 1965). However, it fails to consider “post purchase behaviour” as well eliminates psychological constructs and individual characteristics (Shodhganga, 2011; Rameshgavva, 2012; Pather, 2014).

Howard- Sheth model is the most frequently quoted consumer behaviour model among the researchers of this field (Schiffman & Kanuk, 1997). It weighs wide range of factors affecting purchase with specificity of relationship between them in terms of marketing and social influences (Howard & Sheth, 1969). However, the variables in the model doesn’t stimuli purchase decision similarly in various environments with consumers of different past experiences and Some of the variables in the start up stage of the model gets discontinued half way through and do not continue till end (Rameshgavva, 2012; David, James & John, 2011). Nicosia model (1976) attempts consumer behaviour from a marketer’s perspective representing the relationship between consumers, marketing strategies and decision making process (Nicosia, 1976). This model well elucidates the relationship between a company and its potential customers and is ideal for a company’s new product launching (Runyon & Stewart, 1987; Dunn & Wharton, 2003) and is criticized for its lack of emotional consideration of consumers which plays a key role in purchase decision and choice (Tuck, 1976, Rameshgavva, 2012). Nicosia’s model is also believed to be more relevant to service sector rather than purchase behavior of products (David, James & John, 2011; Rameshgavva, 2012).

Similarly, Sheth-Newman-Gross model was based on five values influencing consumer behavior namely functional, social, conditional, emotional and epistemic values. (Sheth et al, 1991). However, they were alleged to be influenced differently in decision making.
process for various demographics and the variables are not sufficient to allow a prediction of consumer choice (Hawkins et al, 1994; Ram & Manoj, 2014). Engel, Kollat and Blackwell model is similar to Howard- Sheths and is based on variables from theories of human behaviour, psychology, sociology, economics, marketing and characterize its structure with the application of decision making process (Blackwell, M miniard et al, 2001). This model ignores the fact that the consumers might not have the opportunity to evaluate between the alternatives often explained with the example of banking services where consumers might require to strictly follow what is been offered (Chung & Herreara, 2007; Ennew, 1993; Ram & Manoj, 2014).

### Summary of Key theories and Models

<table>
<thead>
<tr>
<th>Theory of Reasoned Action (TRA) – (Ajzen &amp; Fishbein, 1980)</th>
<th>Variables Discussed</th>
<th>Criticism</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theory of Reasoned Action (TRA) – (Ajzen &amp; Fishbein, 1980)</td>
<td>Attitude and subjective norm</td>
<td>Doesn't represent habitual behavior and doesn't consider personality and demographic variables.</td>
</tr>
</tbody>
</table>

| Attitudes and consumer behavior model (Andreason, 1965). | Intrinsic attributes, extrinsic attributes, price availability, attitude (disposition, belief, feelings) and constrains (income, physical capacity, budget priorities, household capacity) | Ignores repeat purchase behavior and is more relevant to new product purchases |

| Description of the theory of buyer behavior model or Howard-Sheth Model (Howard & Sheth, 1969). | Significant/symbolic (Quality, price, distinctive, service, availability) and Social (Family, reference groups, social class) | The variables doesn't stimuli purchase decision the same in various environments, with past experience and in making routine purchases. |

| Consumer decision process model or Nicosia Model (Nicosia, 1976). | Firms attributes, consumer attributes, attitude, experience and motivation | More relevant to service sector rather than product purchase and ignores social factors such as reference groups |

| The five values influencing consumer choice by Sheth-Newman-Gross (Sheth, Newman & Gross, 1976) | Functional value (Price, durability, quality, benefits), Social values (sex, age, religion, lifestyle, race, occupation, income), Emotional value (feelings, experiences), Epistemic value (desire, curiosity) and Conditional value (situation) | Contains all required information of the variables, however is not sufficient to predict future and is influenced differently in various demographics. |

| Model of consumer Behavior by Engel-Kollat-Miniard (Engel, Kollat & Miniard, 2001) | Environmental influences (culture, social class, personal influence, family, situation) and Individual influences (consumer resources, motivation, involvement) | Absence of tangibility for service sector and how the marketing could stimuli differently when purchasing for the first time, second and with |
Researchers attempt to understand the factors that influence consumers buying decision for various products along the globe and among the most recurring questions includes; what motives aspires the consumers? Why chose a specific product or brand over the other? Marketers investigate what customers prefer to buy, how frequently they buy it and where they buy it; to understand why they buy it as the buying patterns can help them forecast the buyer’s future decisions better (Moschis, 1976; Xu et al, 2012). While the factors that influence a specific individual may not another the same, the decision can be a result of every one of these factors. Studies have also shown how the factors, behaviour and attitude of consumers could vary from the nature of purchase product to the consumption environment and how the preference changes with time (Pethiyagoda & Olsen, 2012; Reaz, Nusrat & Oheduzzaman, 2014). While purchase decision of products such as coffee brands are found to be more influenced by social factors (Tanja, 2015), sophisticated products like mobile phones were influenced by physical attributes and advertising (Reaz, Nusrat & Oheduzzaman, 2014). However, most researches conducted on fish products were found to be impacted by product quality, taste, price, packaging and consumption patterns (Nevin, 2003; Jay & Victoria, 2009; Monika & Simonia, 2014).

The conceptual framework is illustrated below

![Figure 1: Research Theoretical Framework](image-url)
In order to determine the factors affecting purchase decision of canned tuna brands in Maldives and verify their significance, below hypothesis were formed based on the preliminary independent variables taken in to consideration for the research theoretical framework.

Social factors are the social groups that the individual belongs to which influence their behaviour and these memberships are related to their origin, family, religion, place of residence, hobbies, interests etc (Perreau, 2014). Influence of family, reference groups, friends’ circles, neighbors and significant others are believed to have an enormous impact on an individuals’ perception and attitude (Kotler & Armstrong, 2009). A family is where the individual obtains values, disciplines, develop their personality, attitude etc. ultimately having an impact on the decisions the person makes on probably for the rest of it. It is also studied to have stronger impact from experience of the product by friends, family, significant others with long term loyalty they have created with a product or brand as a group together. Similarly, a social role or social status a person posse’s and this status or recognition is important in many societies with peoples’ perception, often related to wealth and spending, hence potencies a product or a brand they prefer to chose (Tanja, 2015). In light of literature review, it is found that these social factors do have an influence on buyers purchase decision (Karunia, Zaenal & Suroto, 2013; Reaz, Nusrat & Oheduzzaman, 2014; Monika & Simonia, 2014).

**H1: Social factors have a significant impact on purchase decision of canned tuna brands in Maldives**

Based on findings from previous studies, specifically product characteristics found to be relevant to the study product “canned tuna” were recognized to be price, brand reputation, taste, packaging, availability and nutrition of the product (Anna & Lambros, 2011). Several studies have showed that price is one of the major part of the product feature considered by the customers and that price also plays an important role in customer satisfaction (Herman et al, 2007) (Levy & Weitz, 2012). In other researches to determine consumers perception on price fairness, results have showed that price is a proper predictor for purchase decision of consumers and it has significant impact on brand loyalty too (Wickliffe & Pysarchik, 2001) (Lee et al, 2010) (Kurdsholj & Boziani, 2012). More studies conducted on purchase of food items concluded that proper packaging have a direct visual impact on consumer’s mind leading to higher purchase intention (Khraim, 2011) (Rahimniya et al, 2012) (Kawa et al, 2013). Specifically, in purchase of food products such as fish, nutrition content and the taste has been proven to be immensely impacting buyer decision (Jay & Victoria, 2009) (Ramirez, Hernandez, Polanco & Moarales, 2015).

**H2: Product characteristics have a significant impact on purchase decision of canned tuna brands in Maldives**
Company reputation is the reflection of an impression, opinion, emotions or perception consumers have created in their mind towards a company (Marconi, 1996) (Kahle & Kin, 2006). Usually this image is formed by company logo, buildings, products, services, uniforms, advertisements, public relations, vision, mission, slogan (Lesonsky, 2007) (Argenti & Forman, 2002). A properly executed reputation of the company influences consumer for identification, satisfaction, commitment and loyalty to the company, hence impacting the buying decision (Porter, 1974) (Binninger, 2008) (Zygliodopoulos, 2002).

Referring back to the statistical factors of capital Male’ of Maldives where this research will be conducted and considering the small size and population of the island, knowledge about company characteristics such as reputation, experience, reliability, capability, resources are believed to be strong influencers to consumers purchase decision. Hence, these were grouped in this research to determine their significance (National Bureau of Statistics, 2014), (Nicosia, 1976), (Jay & Victoria, 2009), (Anna & Lambros, 2011), (Nguyen & Gizaw, 2014).

**H3:** Company characteristics have a significant impact on purchase decision of canned tuna brands in Maldives

Marketing is a form of communication carried out by sellers intended to create awareness, positive perception and build a relationship with consumers intending to motivate to buy a certain product. Advertisements is a strategy of promotion by which companies create an emotional link with the potential customers in return customers creating an emotional connection back with the company or the brand (Latif & Abideen, 2011). Effective advertising is believed to capture customers attention and develop a positive sensation and attitude towards the brand, increasing the likelihood of affecting consumer behaviour. Hence, marketing activities is considered to have an influence on consumers purchase decision (Khan et 10, 2012) (Nguyen & Gizaw, 2014), (Reaz, Nusrat & Oheduzzaman, 2014), (Mihna & Behrooz, 2015), (Adam et al, 2012).

**H4:** Marketing activities have a significant impact on purchase decision of canned tuna brands in Maldives

The underlining factors categorized as psychological from previous study are; motivation, belief, attitude, desire, situation, habits, awareness, lifestyle and loyalty. These factors are also referred as the energy that impacts the senses of consumers, creating stimuli which have the strength to subconsciously influence consumers’ decisions. If any of or number of consumers psychological factors are favorable towards a certain product or brand, there is high probability to have a positive consequence on purchase decision (Hoyer & Deborah, 2008). Researches have also observed that influence of psychological, the attachment and loyalty it creates with consumers is more strong on durable goods, specialty good, luxury products rather than consumable goods (Durmaz, 2014; karunia, Zaenal & Suroto, 2013; Nguyen & Gizaw, 2014; Monika & Simonia, 2014; Tanja, 2015, Ramirez, Hernandez, Polanco & Moarales, 2015).
3. Research Design and Methodology

To examine the hypotheses, considering that the major portion of Maldives population resides in capital, data was collected from four different largest supermarkets and fish retailers in Male’ (Agora, STO, Super Foods and Enzi).

The sample

According to 2014 census, there were a total of 68,249 households in total with an average size of 5.5 per household in Male’. (National Bureau of Statistics, 2014). Data was collected by convenient sampling technique for 450 respondents from the chosen four locations which would help cover diverse group of population of different gender, age, qualification, professional background, income and family size.

52.8% of the respondents were male while 47.2% was female; followed by; 36.8% in the age group 18 – 25, 49.1% in the age group 26 – 35, 13% in the age group 36 - 50 and 1.1% respondents above age 50. The percentage of students was 14.1, while the proportion of respondents as per occupation; employed civil servant, employee of a private company, housewife, Entrepreneur, senior citizen and others was 30.3%, 36.3%, 5.6%, 3.4%, 0% and 10.3% respectively.

Majority of respondents were well educated, 17.7% with secondary education, 28.9% with higher secondary, 36.2% with bachelors, 9.8% with masters and 7.4% with other levels of qualification. In terms of income of the respondents participated, majority fall under middle class category with 32.8% respondents with an income between 5000 - 10,000 MVR, 28.7% with 10,000 - 15,000 MVR and 14.7% with 15,000 - 20,000 MVR. There were 11.1% with a lower income (Less than 5000 MVR) and 12.7% with higher income of above 20,000 MVR. Referring back to the population distribution of Maldives, 39% of the population resides in capital Male’ and 56.1% of respondents of this study have more than 3 people in their household, while 4.7% with 1-person household, 11% with 2 people and 28.3% with 3 peoples’ household.

Measures

Table 2 lists all of the constructs and sub-variables taken in to consideration from the related literature and reviewed empirical studies. The items are modified where necessary to make it more suitable to the context of this research to ensure the reliability and validity. Several items were removed during the process from the original construct to meet the standard loading. The multi-factor questionnaire utilized a Likert-Scale from 1-5 where 1 was “Strongly Disagree” and 5 was “Strongly Agree”. A higher score indicated that value is likely to affect consumers while a less score meant the value not as much affecting consumers purchase decision of canned tuna brands in Maldives.
### Key factors identified by the literature review

<table>
<thead>
<tr>
<th>Factors</th>
<th>Independent Variables</th>
<th>Researcher(s) &amp; Date</th>
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<tbody>
<tr>
<td><strong>Social factors</strong></td>
<td>• Social Status</td>
<td>(karunia, Zaenal &amp; Suroto, 2013), (Reaz, Nusrat &amp; Oheduzzaman, 2014), (Monika &amp; Simonia, 2014), (Tanja, 2015).</td>
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<td></td>
<td>• Social Role</td>
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<td>• Family size</td>
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<td>• Reference Groups</td>
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<td></td>
<td>• Value of significant others</td>
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<td></td>
<td>• Brand reputation</td>
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<td></td>
<td>• Taste</td>
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<td></td>
<td>• Packaging</td>
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<td></td>
<td>• Nutrition</td>
<td></td>
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<tr>
<td><strong>Company Characteristics</strong></td>
<td>• Reputation</td>
<td>(Anna &amp; Lambros, 2011), (Nguyen &amp; Gizaw, 2014)</td>
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<tr>
<td></td>
<td>• Experience</td>
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<td></td>
<td>• Reliability</td>
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<td>• Capability/Competency</td>
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<td>• Resources</td>
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<td>• Television advertising</td>
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<td>• Word of Mouth</td>
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<td>• Awareness</td>
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<td></td>
<td>• Personality</td>
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*Table 2: Measure of Constructs*

### Statistical Analysis
The collected data was analyzed using statistical software AMOS 22. CFA analysis was used to confirm the factor that loads on each component and “Psychological factor” was removed from the original construct to meet the standard loading. Structural Equation Modeling was then performed to examine the path analysis and to test the hypotheses. Impact of demographic characteristics were analyzed using One-Way ANOVA to determine whether there is any significant influence of them on consumers purchase decision of canned tuna brands in Maldives.

4. Results and Analysis

Measurement Model

To access the measurement model, two analyses were carried out to verify whether the latent variables demonstrate the intended measures for them to be placed in meaningful constructs of the factor model and examine whether the squared correlation of each item measures the construct demonstrating the proposed theoretical framework fits the study in question (Hair et al, 2010). The analysis shows shows majority of the items in the construct loaded more than 0.5 which shows a good reliability of the model (Holmes-Smith, 2001). The estimates ranged from 0.22 to 0.89 as shown in figure 2 for the variables affecting purchase decision. The variables SF4, SF5, PC1, PC2, M1, Comp4, Comp5, D1, D3 and the construct PSY representing psychological factors which are less than 0.5 were removed from the latent variables following the requirement of maintaining the general rule of thumb having loads more than 0.7 (preferred) though values close to 0.5 can be included as AMOS 22 requires a minimum of at least three items per construct to conduct the analysis successfully (Hair et al, 2009).

Figure 2: First run measurement model of latent variables (Modified)
Confirmatory Factor Analysis measured normed $X^2$ (the ratio between $X^2$ and the degree of freedom) providing direct statistical evidence for the comparative fit index (CFI) and root-mean-square error of approximation (RMSEA) determining the model fitness (Hu & Bentler, 1999). The observed normed $X^2$ for this model is 3.246 ($X^2 = 1259.680$, df = 80). CFI is 0.905, which is required to be greater than a threshold of 0.9 (Hair et al., 2009). Root mean-square error of approximation (RMSEA) is 0.071, recommended is a threshold below 0.08 (Hu & Bentler, 1999). The measurement model indicated a fairly good fit.

The measurement model was further assessed for construct reliability and divergent validity. According to Robson, there can be four threats to the reliability of a set of data; participant error, participant bias, observer error and observer bias (Robson, 2002). Reliability has been a major concern specially when conducting a psychological test to measure behavioral attributes (Rosenthal & Rosnow, 1991). Table 3 below shows elements under each construct measured a Cronbach’s alpha value greater than 0.5 (0.718- Social Factors, 0.571- Product characteristics, 0.80- Company characteristics, 0.769- Marketing and 0.603- Purchase Decision), demonstrating strong consistency of variables under each construct and dependability within the constructs are strong for this study (Nunnally, 1978) (Forman & Nyatanga, 2001).
Additionally, discriminant validity ensures the measurement model of a construct is free from redundant items which is measured by AMOS through a discrepancy measure called Modification Indices (MI). The acceptance requirement is a correlation between exogenous constructs less than 0.85 (Campbell & Fiske, 1959). Table 4 shows that the data satisfies the test revealing there is no multicollinearity ensuring the suitability of using SEM for this study (Field, 2000) (Hair et al, 2009).

### Table 3: Summary of the measurement Scale

<table>
<thead>
<tr>
<th></th>
<th>SF</th>
<th>PC</th>
<th>COMP</th>
<th>M</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>SF</td>
<td>1</td>
<td>0.099</td>
<td>0.106</td>
<td>0.216</td>
<td>0.054</td>
</tr>
<tr>
<td>PC</td>
<td>0.315</td>
<td>1</td>
<td>0.789</td>
<td>0.106</td>
<td>0.514</td>
</tr>
<tr>
<td>COMP</td>
<td>0.325</td>
<td>0.888</td>
<td>1</td>
<td>0.177</td>
<td>0.361</td>
</tr>
<tr>
<td>M</td>
<td>0.465</td>
<td>0.325</td>
<td>0.421</td>
<td>1</td>
<td>0.051</td>
</tr>
<tr>
<td>D</td>
<td>0.233</td>
<td>0.717</td>
<td>0.601</td>
<td>0.225</td>
<td>1</td>
</tr>
</tbody>
</table>

Significant level: *=0.05, **=0.01, ***=0.001. Values below the diagonal are correlation estimates among constructs. Diagonal elements are construct variance and values above the diagonal are squared correlations.

### Table 4: Discriminant Validity

**Structural Equation Modelling (SEM) Measurement Model**

SEM can be considered as a combination of correlation and regression analysis helping investigate the relationships between latent (unobserved) variables that are measured by multiple (observed) indicators or variables (Bollen, 1989). SEM has been widely used by researchers for studies of social sciences and testing casual influences (Snoj et al, 2004).
Figure 3 represents the SEM for hypothesis testing of this study. There are several ways suggested to examine the validity of structural model, one of them is the fit indices of the model. Chi-square of the model is significant with p=0.000 (Chi Square is 259.680, df=80), normed Chi-square is 3.246 (less then 3 is considered good) and this could be because of the large sample size of the study (Hair et al, 2009). Acceptable CFI should be more than 0.9 and this model indicated 0.905. RMSEA is 0.71 and suggested value should be less than 0.08 (Hair et al, 2009). Hence, this model can be considered as a good fit.

Another way of measuring validity of the structural model is by comparing the factor loading obtained from measurement model with full-fledged model. A similar or close loadings indicates a good fit and factor loading for all indicators in this study represented same loading for both measurement and structural model, validating it as a good fit model (Hair et al, 2009).
The third way of measuring SEM validity is conducting path analysis and finding its significance. Below table of path analysis comparison for measurement model and structural model shows the relationships are significant except for COMP (Company Characteristics) which is negatively associated with D (Purchase Decision). However, these results signify an overall positive relationship amongst the dimensions indicating this model is rationale and acceptable to identify factors affecting purchase decisions of consumers in Maldives.

<table>
<thead>
<tr>
<th>Relationship</th>
<th>Parameter Estimates</th>
<th>Relationship</th>
<th>Parameter Estimates</th>
</tr>
</thead>
<tbody>
<tr>
<td>SF correlates D</td>
<td>.23</td>
<td>H1: SF =&gt;D</td>
<td>.01</td>
</tr>
<tr>
<td>PC correlates D</td>
<td>.72</td>
<td>H2: PC =&gt;D</td>
<td>.87</td>
</tr>
<tr>
<td>COMP correlates D</td>
<td>.60</td>
<td>H3: COMP =&gt;D</td>
<td>-.18</td>
</tr>
<tr>
<td>MARKT correlates D</td>
<td>.22</td>
<td>H4: M =&gt;D</td>
<td>.01</td>
</tr>
<tr>
<td>SF correlates PC</td>
<td>.31</td>
<td>SF correlates PC</td>
<td>.31</td>
</tr>
<tr>
<td>PC correlates COMP</td>
<td>.89</td>
<td>PC correlates COMP</td>
<td>.89</td>
</tr>
<tr>
<td>COMP correlates MARKT</td>
<td>.42</td>
<td>COMP correlates MARKT</td>
<td>.42</td>
</tr>
<tr>
<td>SF correlates COMP</td>
<td>.33</td>
<td>SF correlates COMP</td>
<td>.33</td>
</tr>
<tr>
<td>PC correlates MARKT</td>
<td>.32</td>
<td>PC correlates MARKT</td>
<td>.32</td>
</tr>
<tr>
<td>SF correlates MARKT</td>
<td>.47</td>
<td>SF correlates MARKT</td>
<td>.47</td>
</tr>
</tbody>
</table>

Table 5: Path Analysis Comparison

The correlation measure indicates the extent to which the variables are related and the accepted range falls between -1 to +1 while a positive correlation estimates the extent to which the variables increase or decrease in parallel, a negative correlation signifies the extent to which a variable increase while the other decreases (Fisher, 1915). The standardized regression weights of the factors SF (Social factors), PC (product characteristics), COMP (Company characteristics) and MARKT (Marketing) to purchase decision was significant with parameter estimates 0.01, 0.87, -0.18 and 0.01 respectively. These parameters explain the association between the constructs as well that the variables taken in to consideration for the factors do have a significant positive influence on consumers purchase decision of canned tuna brands in Maldives, except for the variable “Company characteristics” which has a negative influence on purchase decision which is similar to previous studies conducted around the globe specifically for food products.

**Test of Hypothesis**

Below table 7 representing the results of hypothesis testing; S.E (standard errors), C.R (critical ratios) which is estimate divided by standard errors. The P-value indicates the significance of each hypothesis.

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Estimate</th>
<th>S.E.</th>
<th>C.R.</th>
<th>P</th>
<th>Accepted or Rejected</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1 : SF =&gt;D</td>
<td>.012</td>
<td>0.51</td>
<td>.138</td>
<td>.890</td>
<td>Rejected</td>
</tr>
<tr>
<td>H2 : PC =&gt;D</td>
<td>.872</td>
<td>.311</td>
<td>2.247</td>
<td>.025</td>
<td>Accepted</td>
</tr>
<tr>
<td>H3 : COMP =&gt;D</td>
<td>-.184</td>
<td>.264</td>
<td>-.508</td>
<td>.611</td>
<td>Rejected</td>
</tr>
<tr>
<td>H4 : M =&gt;D</td>
<td>.014</td>
<td>.063</td>
<td>.142</td>
<td>.877</td>
<td>Rejected</td>
</tr>
</tbody>
</table>

Table 6: Results of Estimation structural Model
The hypothesis analysis results show that the exogenous constructs (Social factors, product characteristics, company characteristics and marketing) contribute well to buyer purchase decision in Maldives. While the regression weights explain the degree of association between the constructs and the manifesting variables, this study suggested that product characteristics was the only significant factor with p<0.05 (Hair et al, 1998).

5. Discussion and Conclusion

The main purpose of this study was to identify the factors affecting purchase decision of canned tuna brands in Maldives. One of the major motive of the study was also for the reason fishing been the livelihood of Maldivians and canned tuna being one the few products the country produces locally while almost all other products are imported. And there are few researches conducted in Maldives studying consumer behaviour, none specifically on canned tuna which was an important reason of this study giving an insight in to the customer decision process in purchasing canned tuna brands in Maldives which was one of the major objectives.

This study hypothesized that social factors has a significant impact on purchase decision based on Karunia, Zaenal and Suroto study in Indonesia and Tanjas study in Finland finding influence of reference groups, family, friends, significant others, neighbours as important factors affecting consumer's choice of products such as coffee brands and milk which are similar household products like canned tuna. However this hypothesis was not supported with a standardized estimate of 0.012 and p-value of 0.890 (Karunia, Zaenal & Suroto, 2013) (Tanja, 2015) . This outcome also contradicts with researches done on purchase intention of various other products, however is sensible considering that canned tuna falls under cheaper and daily life product category rather than expensive household products such as purchase of a television which is found to be collective decision of a group of people or a family. This behaviour is also relatable to study done in Maldives on determinants of adoption of internet banking which found no significance of social influence on purchase decision as well which is rather a pretentious decision compared to purchase of canned tuna (Mihna & Behrooz, 2015).

Secondly, this research hypothesized product characteristics having a significant impact on purchase decision of canned tuna brands in Maldives. The product characters taken in to consideration of this study were; Price, Brand, Taste, Packaging and Nutrition. The results show specific positive influence of three features of the product PC3 (Taste), PC4 (Packaging) and PC5 (Nutrition) with a standardized estimate of 0.872 and p-value of 0.025. There are just a handful researches done in Maldives studying consumer purchase behaviour and none been done specifically for a food item. However, these findings are in line with both the studies reviewed earlier in chapter which were conducted in Maldives for adoption of internet banking and customer based brand equity. Both these studies identified performance of the product, perceived quality, brand association and awareness had a strong positive relationship with consumers purchase decision (Mihna & Behrooz, 2015) (Adam et al, 2012).

Positive influence of product characteristics on purchase decision also coincides with several other studies around the globe for products such as fresh fish, eco-labelled fish,
local food, seafood and even other household items such as milk and coffee (Nevin, 2003) (Jay & Victoria, 2009) (Anna & Lambros, 2011) (Nguyen & Gizaw, 2014). It was also noted that product characteristics is been emphasized as one of the most influential factors by majority of consumer behaviour theories and models (Andreason, 1965), (Howard & Sheth, 1969), (Sheth, Newman & Gross, 1976).

Furthermore, company characteristics such as reputation, experience, competency was hypothesized to have an impact on consumers purchase decision of canned tuna brands in Maldives. This was based on a similar study by Anna and Lambros conducted in Greece for local food specifically fish products which had significant association of production methods, production company’s reliability and competency with consumers purchase decision (Anna & Lambros, 2011). Another study in Sweden also for private labels of food items found production companies expertise strongly influencing purchase intention (Thu Ha & Ayda, 2014). Nevertheless, this study found a negative influence of purchase decision of canned tuna brands in Maldives with a standardized estimate of -1.84 and p-value of 0.611. This could be for the facts reviewed earlier in chapter one that with just one canned tuna producer in the Maldives for over 28 years with few more brands joining in recently and considering Maldives been such a small country where consumers are aware of all the news updates in regard of these production companies.

Additionally, many of the previous related studies showed positive influence of marketing activities such as sales and discount promotions, television advertising, social media playing a role in enhancing purchase decision, hence this study expected to have a significant positive relationship between purchase decision and marketing activities. However, the results found no significant impact of these factors on purchase decision of canned tuna brands in Maldives with a standardized estimate of 0.14 and p-value of 0.877. Coincidentally, this finding is similar to Houston and Li’s study examining fish consumption behaviour in Taiwan which happens to be one of the closest country to Maldives among the empirical evidence taken to this research’s consideration. Houston and Li’s study also showed consumers rather seek nutritious, quality shrimps with better taste in Taiwan which is similar to this study with significance of product characteristics (Houston & Li, 2000).

Likewise, psychological factors such as attitude and belief was alleged to have a significant impact on purchase decision of canned tuna brands in Maldives. Impact of psychological factors have been proven to be one of the most powerful factor in purchase intention by decision theories as well previous studies specifically in regard to complex decision and brand loyalty. This hypothesis was also very relevant to this study considering existing consistent and fewer brands of the product in the market. Studies on similar products such as frozen fish and shrimp in UK showed consumers psychological factors with an impact on purchase decision (Nevin, 2003) (Jay & Victoria, 2009). Surprisingly, this hypothesis was rejected by confirmatory factor analysis, predicting psychological factors is not very relevant on purchase decision of canned tuna brands in Maldives.

Although it was not a major objective of this study, analysis was run for various components of demographic characteristics of the consumers to determine whether there is any significant influence of them on consumers purchase decision of canned tuna brands in Maldives. A one-way ANOVA was conducted for each of the demographic
factor, this analysis lets two different estimates of the population variance to be derived from the data which then calculates a statistic from the ratio of these two estimates between the groups and within the groups. The demographic factors influence on purchase decision of canned tuna brands in Maldives indicated stronger intention of female consumers compared to males. This is in accordance with Verbeke and Vackier which also found consumption and purchase intention of fish among woman was higher compared to men in Belgium (Verbeke & Vackier, 2005). Though consumers’ income level, household capacity and qualification was found to be insignificant, consumers’ occupation was found to be significant with stronger intention among entrepreneurs, housewives and employees of private companies compared to employees’ civil servants, students, senior citizens and others. Entrepreneurs and employees of private companies are believed to be attaining higher income than consumers in other categories and based on the nature of product “canned tuna” been a household item, it is also rational that housewives have a stronger purchase decision of the product compared to consumers from other occupations. This finding supports the study in china exploring consumers’ willingness to purchase eco-labelled seafood which was positively related to consumers’ qualification, budget and gender (Xu et al, 2012).

**Conclusion**

This study hypothesised five main factors that influence consumers purchase decision of canned tuna brands in Maldives and only one was accepted while 4 were rejected. Conclusively, this study found product characteristics of canned tuna are most important factors that have a strong influence on consumers purchase decision of canned tuna brand in Maldives. Increasing product characteristics specifically taste, packaging and nutrition heightens consumer’s intention to purchase. Maintaining a consistent good quality of product is the key, therefor recommending fisheries producers and marketers in Maldives that in order to create a sustainable relationship with their customers they should put effort in supplying good quality product and creating a reputed brand image while maintaining adequate price in accordance with the market. Hence, the most crucial recommendation this study suggests to the canned tuna producers and marketers in Maldives is the importance of investing on producing a quality, nutritional product which is offered with an attractive packaging, which would help creating a positive perception and attitude to motivate purchase.

**Future Work**

Since this study was solely based on canned tuna, it is also important to research the same for other products in Maldives to analyze the difference in purchase intention. These findings are limited to the capital city of Maldives and additional research is needed in other regions especially in populated atolls of the country. With the finding of housewives typically making purchase decision for food items for the family, it is also suggested that future researches be conducted targeted on housewives to study their behaviour in depth. Future researches should aim on deeper perspectives, identifying exact characters of the product such as; taste in specific consumer’s preference of product media; tuna in water, tuna in sunflower oil, tuna in vegetable oil or tuna in olive oil would be resourceful to producers. Given the interesting results of this study, it will also be worth exploring mediating variables between the characteristics of the product in depth which influences the willingness to purchase intention.
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