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Contents

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Polish Young Consumers' Attitudes Towards Mobile Phone Brands

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ABSTRACT

Consumers' attitudes are determined by many factors, one of which is a product brand. The objective of the paper is to present young consumers' attitudes towards mobile phone brands. The ABC model of attitudes is the theoretical framework for the study. The research method was a paper-and-pencil survey (PAPI) on the sample of 250 respondents aged 18–25. The research showed that it is just the name of the brand that can affect consumers' attitudes. It is a derivative of associations with the brands. The value of the attitude components is differentiated by brands. The affective component appeared to be the most important and the cognitive component – the least important. The findings show that gender and brand of respondents' mobile phones also differentiate the importance of components of young consumers' attitudes on the mobile phone market. Limitations and recommendations for further research are presented as well.

JEL classification: M31, M37

Keywords: brand, brand image, consumer attitude, mobile phone market

1. INTRODUCTION

Brand is one of the key elements of every enterprise and its products, influencing the decisions made by buyers. The brand image exists in perception and awareness of consumers (Liczmańska, 2016). Therefore, ensuring a positive perception of the brand is particularly important (Iglesias et al., 2019). What influences subjective opinions often results from what we know about a brand (Koll & von Wallpach, 2009). We receive this information through the senses, which is why the image is influenced by both the text and the logo of the brand and the message it carries (Mruk, 2012). One of the biggest markets is the mobile phone market (*www.idc.com/promo/smartphone-market-share/vendor*), on which many strong brands exist. This market should be examined for the concept of consumer behavior, and more specifically – consumer attitudes towards mobile phone brands on this market. Building the right brand image requires knowledge of buyers' cognitive, emotional and behavioral attitudes towards products. The brand image influences the behavior of buyers on the mobile phone market. It is a factor that can change the consumer's decision. Brands with a large market share are perceived as better brands. Phone brands can positively influence the purchase of a product or, on the contrary, they can discourage consumers.

The purpose of this article is to compare the importance of components of Polish young consumers' attitudes towards mobile phone brands. The presence of a brand when discussing a phone model may be more important for their subjective opinions than the absence of it.

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The hypotheses set out in the article were verified by a survey researching three dimensions of consumer attitudes on the mobile phone market.

The paper is structured as follows: first there is a theoretical background of brand and consumer attitudes towards brands, then the research methods are presented. The final part of the article covers the research analysis and conclusions.

2. BRAND THEORY

In a decision-making situation, the consumer recognizes the brand as a source of information (Urbanek, 2002). Brand image is understood as brand perception, which is based on information about the brand and previous experience of buyers. It depends on the attitude of consumers, their preferences and beliefs (Assael, 1992). There is a set of five features that can be used to classify the brand personality. They are as follows: sincerity (is it realistic, honest, decent and cheerful), excitement (is it brave, energetic, inventive and still up to date), competence (is it trustworthy, intelligent and effective), sophistication (is it high-end and charming), ruggedness (is it open to the environment and strong) (Aaker, 1997). A big number of studies focus on this issue, also with some modifications of this model (Koebel & Ladwein, 1999; Aaker, Benet-Martínez, & Garolera, 2001; Alvarez-Ortis, & Harris, 2002; Lee & Oh, 2006; Toldos, 2012; Kim, Shim, & Dinnie, 2013). For example, the study by Chung and Park (2015) examined the personality of mobile phone brands through the brand dimension scheme proposed by Aaker. The study examined 4 brands: Samsung, Nokia, Apple and Sony and was conducted in the United Kingdom, Germany and France in the form of online surveys. This study showed that brand personality is positively associated with brand loyalty. The results of this study are also linked to the fact that each of the personality dimensions of brands affect consumer behavior differently. An example is 'sincerity', which was positively associated with the Sony brand, while 'ruggedness' – with the Samsung and Apple brands. Moreover, it has been demonstrated that 'excitement', 'competence' and 'sophistication' were those that were most influential for brand loyalty (Chung & Park, 2015). Brand personality dimensions proposed by Aaker may also affect the characteristics of users of brands, which interested Ajilore K. and Solo-Anaeto M. (2016). In their study, they demonstrated that smartphone users reflect their personality in the personality of the mobile phone brand that they use (Ajilore &s Solo-Anaeto, 2016).

Another model, known as The Kapferer Brand Identity Prism, consists of 6 elements: physique (which is important in brand marketing communication), personality (which has already been discussed), culture (most often it is identified with the culture of the country or state), relationship (intangible exchange between the retailer and the brand and between the brand and the service sector), reflection (by buying a product of the brand, buyers desire to express themselves, they try to find their characteristics in the characteristics of the purchased product) and self-image (the buyer creates a certain internal, new relationship with himself using brands, which works towards his development) (Kapferer, 1992). The Kapferer model does not only relate to product brands, but also to other aspects such as political marketing (Bhattacharya, Kumar, & Dutta, 2017) or cultural institutions (Andreea, 2013).

3. CONSUMER ATTITUDES TOWARDS BRANDS

The discussion about the concept of consumer attitudes starts with explaining the impact of emotions on consumer behavior. Despite the fact that emotions usually fade over time, they leave behind a trace that presents itself in the form of our mood. Mood is considered to be the weakest and short-term emotion. Affect, in turn, is stronger (Gasiul, 2007). Emotions can also

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shape the attitude towards something and perform some functions, e.g., they control decision-making behavior or inform about the level of arousal (Antonides & van Raaij, 2003). The number of emotions is as large as the number of studies focused on them (Kahn & Isen, 1993; Barone, Miniard, & Romeo, 2000; Isen, 2001; Isen, Labroo, & Durlach, 2004; Mogilner & Aaker, 2009; Zarantonello et al., 2018; Konu et al., 2020).

Within the attitude, there are three components, which is known as the ABC model (Rosenberg & Hovland, 1960; Breckler, 1984). The first one is the cognitive component, referring to beliefs about the object of attitudes derived from the knowledge of a product. The second one is the conative component, which applies to the actions that a person takes in relation to an object, as well as to behaviors associated with it. The last one – the affective component – refers to feelings about the product or brand (Juchnowicz, 2014; Trojanowski, 2013). Interestingly, a particular attitude may refer to more than one component than the other. Usually, there is a relationship between these components. One of the components can be so strongly developed that it will determine the whole attitude and minimize the importance of the other components. Therefore, research on consumer attitudes should focus not only on identifying them, but also on determining the strength and direction of their impact (Aronson, Wilson, & Akert, 1997; Trojanowski, 2013). The ABC model was the theoretical framework for many studies (Kwon & Vogt, 2009; Uddin & Khan, 2016; Chiu et al., 2019).

Brand image is a key factor which often affects consumer choices (Degeratu, Rangaswamy, & Wu, 2000; Sallam, 2016; Foroudi, 2018). This relationship applies to the vast majority of product categories. What buyers pay special attention to is the product brand. The brand attitude has been studied on several markets. Daugherty, Li and Biocca (2008) compared the participants' attitude towards the brand, their knowledge about the product and their purchase intention. The product was a camera. The first group received a product press advertisement which contained all information about the camera and its photo. The second group received the physical product and the third group could view the product in 3D using a computer. All three examined dimensions obtained the lowest score for the group that received the press advertisement. The highest results were recorded by the group that experienced the product in a virtual way (Daugherty, Li, & Biocca, 2008).

The study conducted by Schemer, Matthens, Wirth and Textor (2008) was aimed at checking whether it is possible to evoke a negative or positive attitude towards a product of an unknown clothing brand by linking it with a rap music performer, depending on what emotions he was evoking in the study (Schemer et al., 2008).

Another study was described by Slaba (2019). The purpose of the study was to analyze consumer behavior towards branded and non-branded goods on the mobile phone market in the Czech Republic. The results showed that consumers who prefer branded phones are more loyal than those who prefer non-branded phones. The respondents with higher income also occurred to be more loyal and less likely to buy cheaper phones. 61% of respondents said that the phone brand was what most influenced their purchasing decision. It is worth mentioning that the most frequently used mobile phone brands owned by respondents in this survey were Samsung (20%), Huawei (16%), Xiaomi (12%) and Apple (11%) (Slaba, 2019).

The study on the mobile phone market was inspired by the study above. The mobile phone market in relation to consumer behavior has attracted many researchers (Turnbull, Leek, & Ying, 2000; Martensen, 2007; Kımıloğlu, Aslıhan Nasır, & Nasır, 2010; Badowska & Rogala, 2016; Širola & Gallopeni, 2020). The author decided to examine if only the name of the brand can influence the consumers' attitudes towards the products described.

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4. RESEARCH METHODS

The aim of the study is to compare the importance of components of attitudes on the mobile phone market among young consumers. Because each attitude consists of three components, it is worth asking which one is the most important for the attitudes of young people.

H1: *The affective component of consumers' attitude towards a mobile phone is the most important component for young consumers.*

The associations with brands correspond with emotions (affective component). They have an impact on consumer behavior (conative component), which has been explained in the theoretical background. The cognitive component seems to be the least corresponding to brand associations.

H2: *The importance of components of consumers' attitude towards a mobile phone is related to the brand used in the questionnaire.*

The emerging question is whether the characteristics of the respondents, such as gender or their phone brand, can affect the results of the survey. These are the features that can differentiate the importance of individual components of attitudes.

H3: *The importance of components of consumers' attitude towards a mobile phone is related to the brand of the mobile phone owned by the respondent.*

H4: *The importance of components of consumers' attitude towards a mobile phone is related to the respondent's gender.*

In order to verify these hypotheses, a quantitative study in the form of PAPI survey was conducted. The questionnaire contained 15 statements which were intended to identify consumers' attitudes towards mobile phones based on their parameters included at the beginning of the questionnaire. The respondents responded to these statements on a 5-point scale, based on Likert scale. The description of the scale is as follows: 1 – I strongly disagree, 2 – I rather disagree, 3 – neither agree nor disagree, 4 – I rather agree, 5 – I strongly agree. The questionnaire was prepared in 5 versions; however, each respondent could fill in only one version (the one that was given to him/her). In each version, the control variable was the mobile phone brand: Samsung, Huawei, Xiaomi and iPhone (Apple). One version of the questionnaire, treated as the base one, was without the brand listed. The presented parameters of the mobile phone were identical in each version. These were the parameters of the Samsung Galaxy A6 phone, presented under other brands. Data for all the phones were taken from the large online mobile phone catalogue *www.mgsm.pl*.

Table 1
Telephone parameters presented in the survey questionnaire

internal memory	32 GB
main camera	16 MP
display size	5.6”
display resolution	1480 x 720 (HD+)
processor	1.6 GHz
RAM memory	3 GB

Source: Author's elaboration based on *www.mgsm.pl/pl/katalog/samsung/ galaxya6/*.

Cronbach's alpha has been analyzed. Internal consistency is the highest for the affective component. The lowest internal consistency is for the cognitive component. These results can be justified by the sample size or by the number and form of structuring statements. For this reason, the statements that underestimate Cronbach's alpha should be identified.

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Table 2
Cronbach's alpha for individual components after excluding statements lowering this value

	Cronbach's alpha	Cronbach's alpha after excluding statements lowering this value
Cognitive component:		
I'm interested in issues related to the mobile phone market		
Whenever I can, I read almost everything about the mobile phone market		
I'm interested in the latest phone models appearing on the market	0.49	0.58
The way the phone is used has a greater impact on its functionality than its parameters		
The phone should only be used to fulfill its basic functions (calls, messages, or surfing the Internet)		
Affective component:		
I am happy when I get a new phone		
I like having a telephone that is "fashionable"		
It is important for me to have a good quality phone model	0.75	0.75
I want to change my phone model when I see that one of my friends has a better one		
I am happy when I can boast about my phone		
Conative component:		
When buying a mobile phone, I pay attention to its parameters		
The parameters of the phone presented above prove that it is a good quality phone	0.63	0.74
The phone with the parameters above meets my requirements		
I often connect the phone to the charger		
I would buy a phone with the parameters shown above		

Source: Author's elaboration.

The analysis of the cognitive component led to the answer that statement '*The way the phone is used has a greater impact on its functionality than its parameters*' was the one that significantly underestimated Cronbach's alpha. As for the affective component, its values were acceptable. Relatively low consistency occurs in the conative component. In its case, the statement lowering the most the level of internal consistency was '*When buying a mobile phone, I pay attention to its parameters*'. After excluding these statements from the analysis, Cronbach's alpha values increased to the level presented in Table 2.

The survey was conducted from February 24 to March 11, 2020. The participants of the study were university and high school students aged 18–25. The mean age of respondents was 20.74. The distribution of respondents by age is shown in Figure 1. The group of respondents of the study was 250 people (50 people for each version of the questionnaire). This relatively representative group and its equal distribution by the 5 variables studied allowed for a direct data comparison between groups. It was ensured that the questionnaires were relatively evenly distributed according to gender. 56% of the respondents were women and 44% were men.

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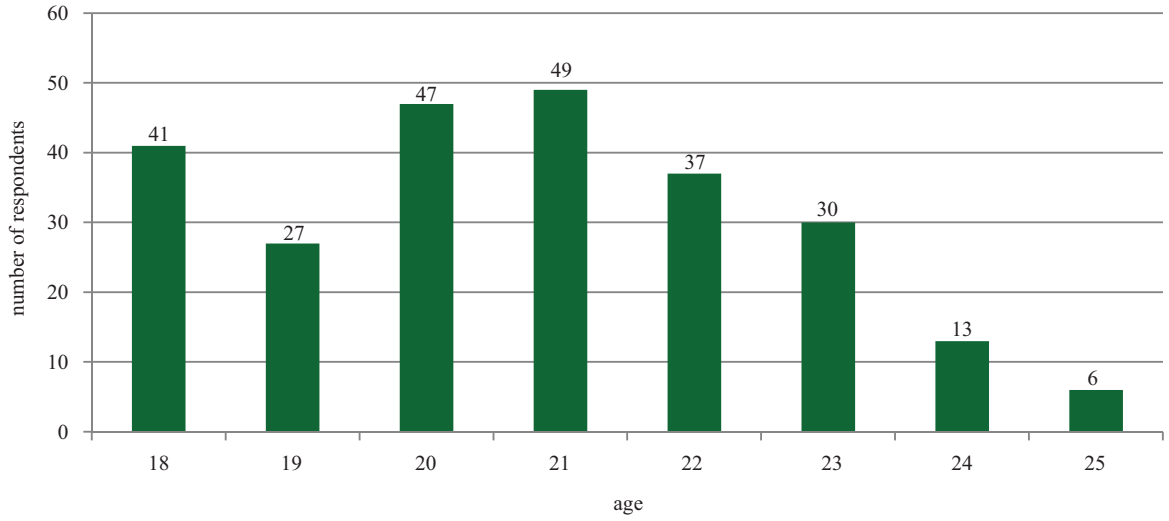
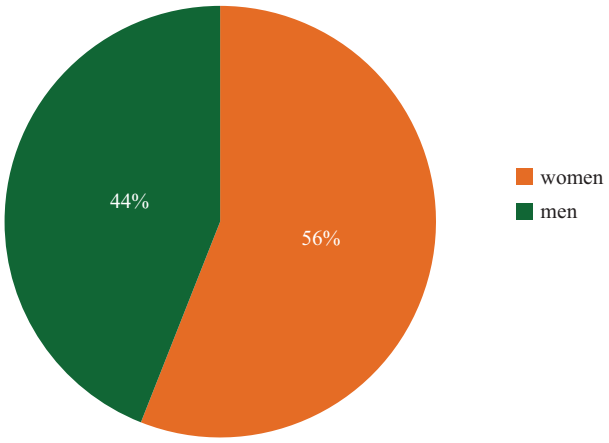
Figure 1
The number of respondents by age



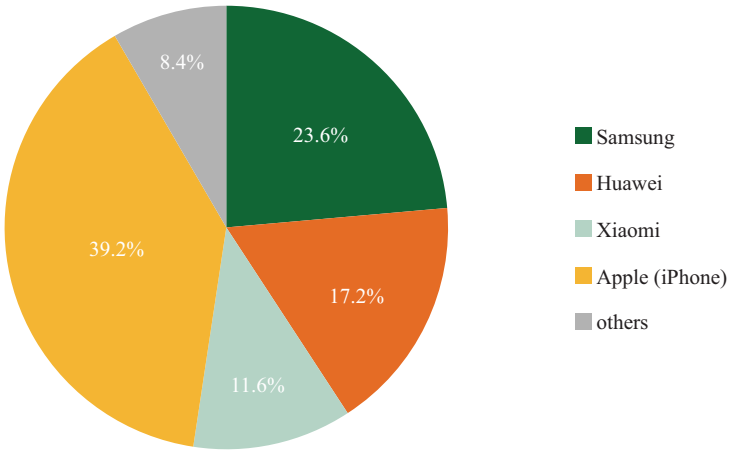
Source: Author's elaboration.

Figure 2
The structure of respondents by gender



Source: Author's elaboration.

Figure 3
The structure of owned mobile phone brands among the survey respondents



Source: Author's elaboration.

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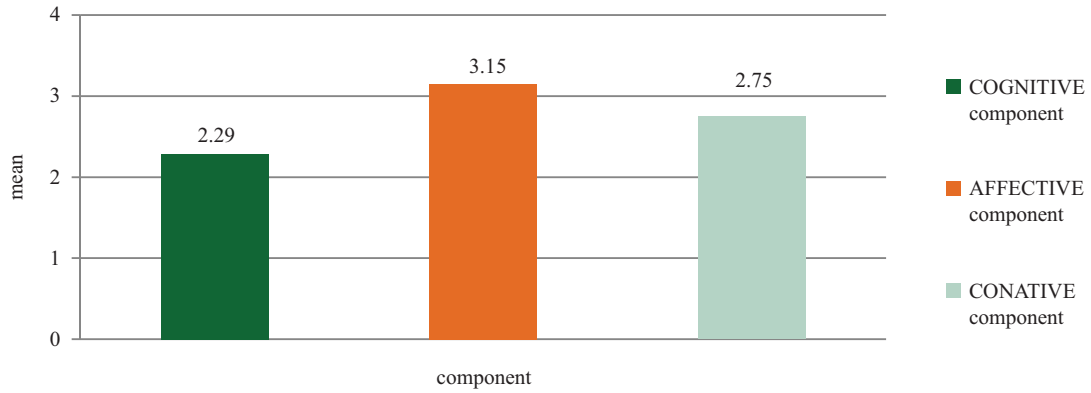
The structure of owned mobile phone brands among the survey respondents shows that the number one is Apple, with a 39.2% share. Samsung is in the second position with a 23.6% share, followed by Huawei with a 17.2% share and Xiaomi with a 11.6% share. Other brands were treated as the 'other' (8.4% share) category. At this point, we can see the young people's preferences when it comes to mobile phone brands. It should not be forgotten that the study was conducted among young students. Usually, these young people come from a wealthy family, which means that the brands of their phones can also relate to their standard of living.

5. ANALYSIS OF THE RESEARCH RESULTS

To verify the first hypothesis, it has been analyzed which component is perceived as the most important. The data presented in Figure 4 were the result of calculating the mean for each component concerned, i.e. for the pool of statements assigned to each component.

Figure 4
The mean for the components of young consumers' attitudes towards mobile phones



Source: Author's elaboration.

The highest score is reported for the affective component (3.15), while the lowest for the cognitive component (2.29). The ANOVA analysis shows that there is a significant difference between the components ($F=64.329$; $p<0.0001$). Therefore, hypothesis 1 is confirmed.

Hypothesis 2 was verified by calculating the mean for the components concerned, i.e. for the pool of statements assigned to each component for each brand (Figure 5). Therefore, it is easy to observe changes in individual values. In the case of the no-brand questionnaire, the mean for the cognitive component was 2.17. The fact that there was no brand could have an impact on the fact that respondents, analyzing the parameters presented to them, believed that they could assess the phone model only on the basis of its parameters. Higher result were recorded for every other brand. The biggest value regarding the cognitive component was noticed for the Xiaomi brand as a variable (2.50).

For the affective component, the no-brand questionnaire also obtained the last result of 3.00. Higher results were recorded for every other brand and the highest result was again recorded for the Xiaomi brand (3.37).

When it comes to the values calculated for the conative component, the no-brand questionnaire also recorded the lowest result – 2.59. This means that each brand has influenced the respondents' behavior, or at least on their intentions. This time, the Apple brand recorded the highest result (2.92).

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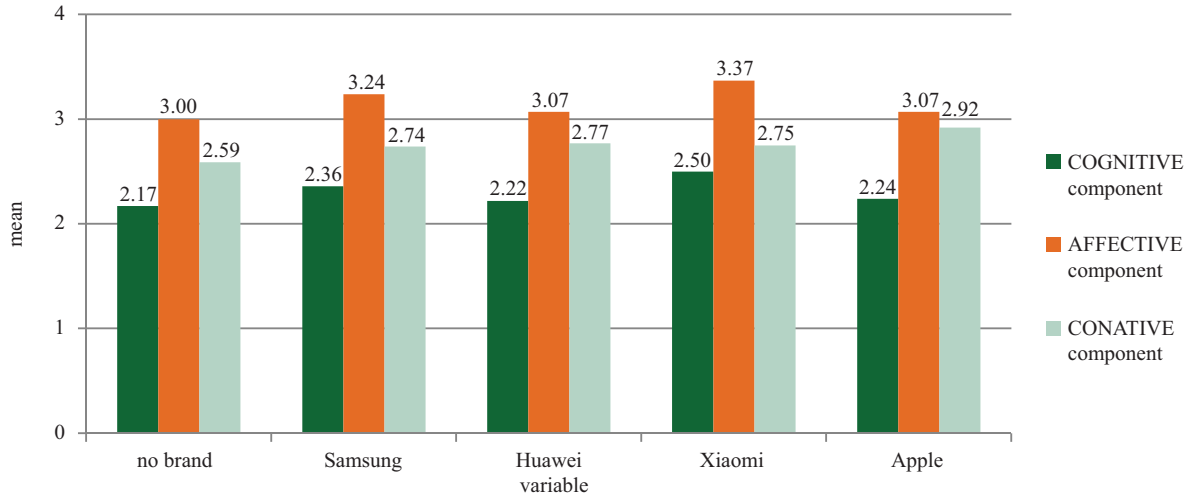
Figure 5
Research results on individual components of consumer attitudes on the mobile phone market



Source: Author's elaboration.

In each version of the questionnaire, the highest score is reported for the affective component, while the lowest for the cognitive component. The ANOVA analysis (Table 3) shows that there is not a significant difference between the brands as regards their impact on each component. Therefore, hypothesis 2 is negatively verified.

Table 3
ANOVA analysis for each component of consumers' attitudes towards mobile phone brands

Component	F value	Sig.
cognitive	1.605	0.173
affective	1.946	0.103
conative	0.719	0.579

Source: Author's elaboration.

Hypothesis 3 assumes that phone brands owned by respondents differentiate the importance of individual components of attitudes towards mobile phones (Figure 6). There is a change in the importance of components value in the case of Xiaomi mobile phone brand users. The conative component is the most important, but its value is not significantly higher than the affective component value.

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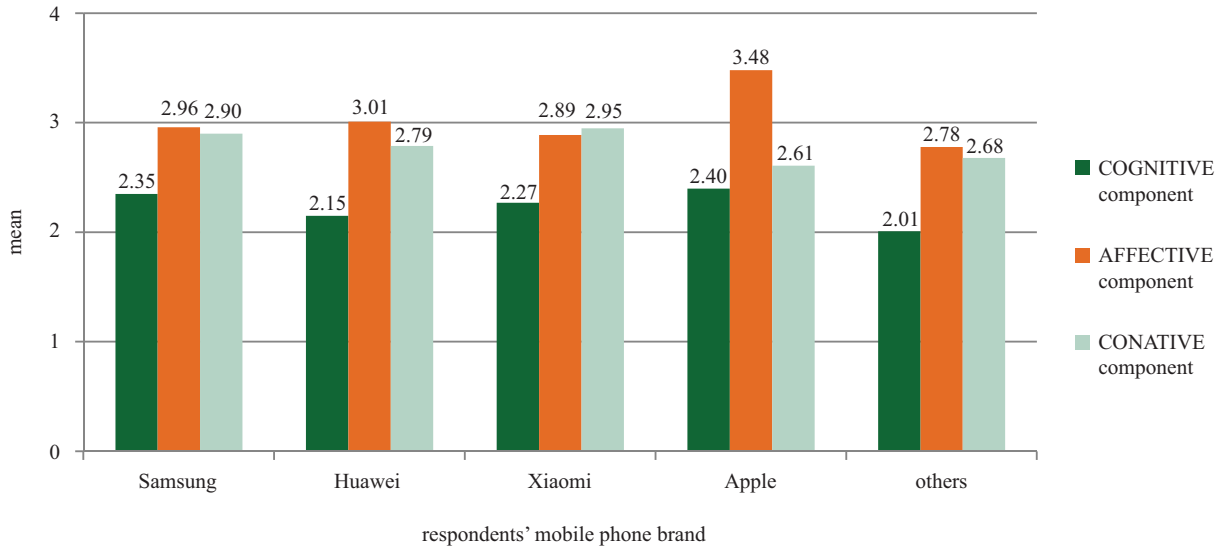
Figure 6
Research results on individual components of consumer attitudes on the mobile phone market among respondents' mobile phone brands



Source: Author's elaboration.

The relationship between phone brands owned by respondents and the value of components was investigated using the ANOVA test (Table 4). Only the importance of the affective component is significantly differentiated by the mobile phone brands owned by respondents. Therefore, hypothesis 3 is only partially supported. For the Apple mobile phone users, the affective component was the most important. Huawei and Samsung mobile phone users are following this result, whereas for Xiaomi and other mobile phone brands users, the importance of the affective component was the least.

Table 4
ANOVA analysis for each component of consumers' attitudes towards mobile phone brands among respondents' mobile phone brands

Component	F value	Sig.
cognitive	1.690	0.152
affective	8.607	0.0001
conative	1.217	0.303

Source: Author's elaboration.

Hypothesis 4 assumes that gender differentiates the importance of individual components of attitudes towards mobile phones (Figure 7). It is a cognitive component that is more important for men than for woman. On the other hand, the affective and conative components are more important for women. These differences are significant, which the results of t-test in Table 5 show.

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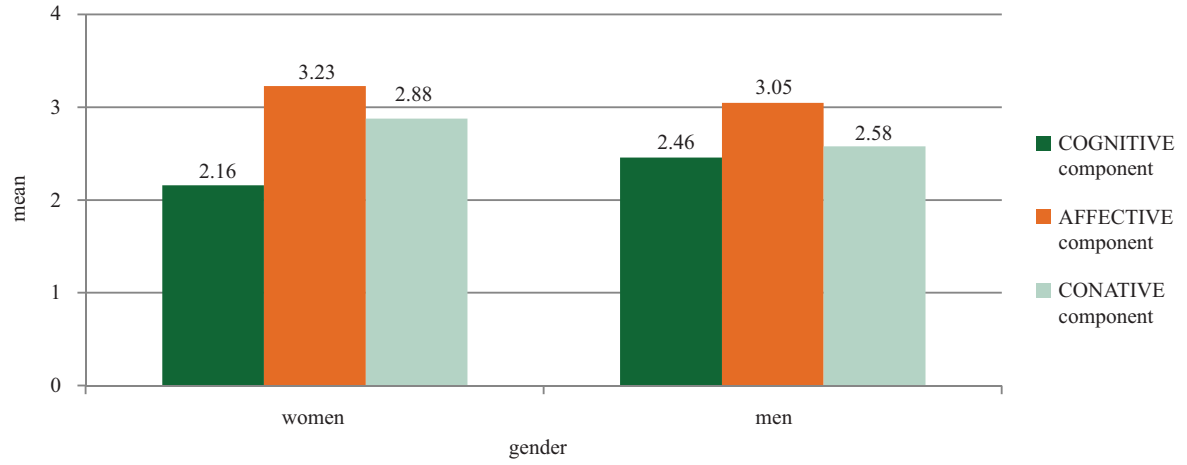
Figure 7
The mean for the components of young male and female consumers' attitudes towards mobile phones



Source: Author's elaboration.

Table 5
T-test for the attitude components between male and female respondents

Component	t value	Sig.
cognitive	–3.118	0.001
affective	1.869	0.031
conative	2.355	0.009

Source: Author's elaboration.

Therefore, hypothesis 4 is supported, because the importance of individual components is significantly differentiated ($p<0.05$) by gender.

6. CONCLUSIONS AND STUDY LIMITATIONS

The study showed that the importance of the components of attitudes towards mobile phone brands is significantly different. It has been found that the brand exerts a smaller influence on consumers' knowledge (cognitive component), bigger on their behavior (conative component), and the biggest on the felt emotions (affective component) associated with a brand. Furthermore, the brands of mobile phones differentiated the importance of components of attitudes in a different way, but it was not significant.

The brands of respondents' mobile phones significantly differentiate the importance of the affective component of Polish young consumers' attitudes on the mobile phone market, but not the cognitive and conative components. The observation made for the gender of respondents proved that gender significantly influences the components of attitudes towards mobile phone brands.

The author has not found any studies that relate to Polish young consumers' attitudes towards the mobile phone brands. The conclusions can be used by marketing specialists or brand managers to take care about better brand perception.

The described study was carried out in less than a month; it is worth extending this period or conducting research in various periods of the year and observe any changes that may occur. What is more, the survey results could have been influenced by the structure of respondents by field of study. People from science fields may have had more knowledge about the market concerned.

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The research has some limitations. The sample size of the research was relatively representative, but it is worth conducting a similar survey on a larger sample. What is more, it is worth conducting a survey on respondents in other age ranges, which may show generational differences in this area. The aspect studied by the author can be raised in the case of many other industries and products, not just mobile phones, because the results presented in the article cannot be translated into other markets. It also seems to be better to compare only two brands, which can bring us to more substantial conclusions. The number of variables should be in correlation with the sample size. In addition, the examined variable can be not only the brand, but any other feature that interests us, such as the price or packaging presented in the photograph included in the questionnaire. It is also worth adding the income or education scale to the characteristics, which can bring us to more specific conclusions. The PAPI type of the survey was the reason why its conduct was time-consuming. The CAWI type could be a better solution for this. Moreover, the direction of the answers given should be predicted while preparing a questionnaire.

References

Books and articles

Aaker, J.L. (1997). Dimension of brand personality. *Journal of Marketing Research*, *24*, p. 351.

Aaker, J., Benet-Martínez, V., & Garolera, J. (2001). Consumption symbols as carriers of culture: A study of Japanese and Spanish brand personality constructs. *Journal of Personality & Social Psychology*, *81*(3), 492–508.

Ajilore, K., & Solo-Anaeto, M. (2016). Smartphone brand personality as a predictor of brand value among undergraduates of Babcock University. *Global Journal of Management and Business Research: E Marketing*, *16*(1), version 1.0, 41–42.

Alvarez-Ortiz, C.M., & Harris, J. (2002). Assessing the structure of brand personality among global and local Mexican brands. *Conference: AMA Summer Educator's Proceeding*, *13*.

Andreea, C. (2013). Exploring Kapferer's brand identity prism applicability in theatre. *International Journal of Advances in Management and Economics*, *2*(2), 18–23.

Antonides, G., & Fred van Raaij, W. (2003). *Zachowanie konsumenta: podręcznik akademicki*. Warszawa: PWN.

Aronson, E., Wilson, T.D., & Akert, R.M. (1997). *Psychologia społeczna: serce i umysł*. Poznań: Wydawnictwo Zysk i S-ka.

Assael, H. (1992). *Consumer behavior and marketing action.* Boston: Kent Publishing Co.

Badowska, S., & Rogala, A. (2016). Nabywanie i użytkowanie produktów technologicznych przez konsumentów 50+ na przykładzie telefonów komórkowych − wyniki badań w Polsce. *Handel Wewnętrzny*, *2*(361), 17–30.

Barone, M.J., Miniard, P.W., & Romeo, J.B. (2000). The influence of positive mood on brand extension evaluations. *Journal of Consumer Research*, *26*, 386–400.

Bhattacharya, S., Kumar, R.V., & Dutta, A. (2017). Exploring Kapferer's brand identity prism applicability in Indian political marketing aspect with special focus to youth voters. In *Start-up enterprises and contemporary innovation strategies in the global marketplace*.

Breckler, S.J. (1984). Empirical validation of affect, behavior, and cognition as distinct components of attitude. *Journal of Personality and Social Psychology*, *47*(6), 1191–1205.

Chiu, K.-C., Chen, C.-L., Lin, H.-F., Wu, Y.-H., & Shih, L.-T. (2019). A preliminary study on product design of emotional appeal by canonical correlation analysis of public attitudes towards water-saving equipment based on ABC model. *2019 IEEE International Conference on Industrial Engineering and Engineering Management (IEEM)*.

Chung, S., & Park, J. (2015). The influence of brand personality and relative brand identification on brand loyalty in the European mobile phone market. *Canadian Journal of Administrative Sciences*, *34*(1), 51–59.

Daugherty, T., Li, H., & Biocca, F. (2008). Consumer learning and the effects of virtual experience relative to indirect and direct product experience. *Psychology and Marketing*, *25*(7), 568–586.

Degeratu, A.M., Rangaswamy, A., & Wu, J. (2000). Consumer choice behavior in online and traditional supermarkets: The effects of brand name, price, and other search attributes. *International Journal of Research in Marketing*, *17*(1), 55–78.

Foroudi, P. (2018). Influence of brand signature, brand awareness, brand attitude, brand reputation on hotel industry's brand performance. *International Journal of Hospitality Management*.

Gasiul, H. (2007). *Teorie emocji i motywacji*. Warszawa: Wydawnictwo Naukowe UKSW.

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Iglesias, O., Markovic, S., Singh, J.J., & Sierra, V. (2019). Do customer perceptions of corporate services brand ethicality improve brand equity? Considering the roles of brand heritage, brand image, and recognition benefits. *Journal of Business Ethics*, *154*(2), 441–459.
Isen, A.M. (2001). An influence of positive affect on decision making in complex situations: Theoretical issues with practical implications. *Journal of Consumer Psychology*, *11*, 75–85.
Isen, A.M., Labroo, A.A., & Durlach, P. (2004). An influence of product and brand name on positive affect: Implicit and explicit measures. *Motivation and Emotion*, *28*(1), 43–63.
Juchnowicz, M. (2014). *Zarządzanie kapitałem ludzkim. Procesy-narzędzia-aplikacje*, Warszawa: PWE.
Kahn, B., & Isen, A.M. (1993). The influence of positive affect on variety-seeking among safe, enjoyable products. *Journal of Consumer Research*, *20*, 257–270.
Kapferer, J.-N. (1992). *Strategic brand management: New approaches to creating and evaluating brand equity.* New York: The Free Press.
Kim, Y.K., Shim, S.W., & Dinnie, K. (2013). The dimensions of nation brand personality: A study of nine countries. *Corporate Reputation Review*, *16*(1).
Kımıloğlu, H., Aslıhan Nasır, V., & Nasır, S. (2010). Discovering behavioral segments in the mobile phone market. *Journal of Consumer Marketing*, *27*(5), 401–413.
Koebel, M.N., & Ladwein, R. (1999). L'échelle de personalité de la marque de Jennifer Aaker: adaptation au contexte français. *Décisions Marketing*, *16*(3), 81–88.
Koll, O., & von Wallpach, S. (2009). One brand perception? Or many? The heterogeneity of intra-brand knowledge. *Journal of Product & Brand Management*, *18*(5), 338–345.
Konu, H., Murphy, J., Komppula, R., & Mikkonen, T. (2020). Investigating emotional commitment towards a region and a hotel brand. *International Journal of Hospitality Management*, *87*, 102467.
Kwon, J., & Vogt, C.A. (2009). Identifying the role of cognitive, affective, and behavioral components in understanding residents' attitudes toward place marketing. *Journal of Travel Research*, *49*(4), 423–435.
Lee, M.Y., & Oh, K.Y. (2006). An exploratory study on brand personality: The case of a traditional casual brand in Korea. *Journal of Fashion Business*, *10*(6), 79–90.
Liczmańska, K. (2016). *Strategia marek produktowych na rynku FMCG*. Toruń: Wydawnictwo Naukowe Uniwersytetu Mikołaja Kopernika.
Martensen, A. (2007). Tweens' satisfaction and brand loyalty in the mobile phone market. *Young Consumers*, *8*(2), 108–116.
Mogilner, C., & Aaker, J. (2009). The 'time vs. money effect': Shifting product attitudes and decisions through personal connection. *Journal of Consumer Research*, *36*.
Mruk, H. (2012). *Marketing. Satysfakcja klienta i rozwój przedsiębiorstwa*, Warszawa: PWN.
Rosenberg, M.J., & Hovland, C.I. (1960). Cognitive, affective, and behavioral components of attitudes. In: M.J. Rosenberg & C.I. Hovland (Eds.), *Attitude organization and change* (pp. 1–14). New Haven, CT: Yale University Press.
Sallam, M.A. (2016). The impact of brand image and corporate branding on consumer's choice: The role of brand equity. *International Journal of Marketing Studies*, *8*(1), 98.
Schemer, C., Matthens, J., Wirth, W., & Textor, S. (2008). Does "passing the courvoisier" always pay off? Positive and negative evaluative conditioning effects of brand placements in rap videos. *Psychology and Marketing*, *25*(10), 923–943.
Širola, D., & Gallopeni, V. (2020). The impact of brand equity on consumer behavior on Croatian mobile phone market. *CroDiM: International Journal of Marketing Science*, *3*(1).
Slaba, M. (2019). Consumer behaviour regarding branded and non-branded goods on the mobile phone market: Impact of experience, price and loyalty. *Economic Annals-XXI*, *175*(1–2), 64–66.
Toldos, M.P. (2012). Dimensions of brand personality in Mexico. *Global Journal of Business Research*, *6*(5), 35–47.
Trojanowski, M. (2013). *Postawy konsumentów wobec sprzedaży wysyłkowej w Polsce: ujęcie dynamiczne*. Warszawa: Wydawnictwo Naukowe Wydziału Zarządzania Uniwersytetu Warszawskiego.
Turnbull, P.W., Leek, S., & Ying, G. (2000). Customer confusion: The mobile phone market. *Journal of Marketing Management*, *16*(1–3), 143–163.
Uddin, S.F., & Khan, M.N. (2016). Online shopping attitudes of management students in India: An empirical exploration of genders. *Pacific Business Review*, *8*(7), 40–45.
Urbanek, G. (2002). *Zarządzanie marką*. Warszawa: PWE.
Zarantonello, L., Romani, S., Grappi, S., & Fetscherin, M. (2018). Trajectories of brand hate. *Journal of Brand Management*, *25*, 549–560.

Internet sites

www.mgsm.pl/pl/katalog/samsung/galaxya6/ (retrieved on 03 February 2020).
www.idc.com/promo/smartphone-market-share/vendor (retrieved on 03 July 2020).

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Is Your Purchase Intention Influenced by Irrational Factors? An Investigation of Fashion Industry

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ABSTRACT

This research paper mainly aims to identify and analyse irrational factors that impact consumers' purchase intention, especially in the fashion industry. The data for this study were collected from 205 consumers of various nationalities via an online self-administered questionnaire. The acquired data were put through a thorough process to establish their relevance and to ensure that the data were ready for further analysis by applying the SPSS & AMOS software. Three irrational factors were extracted from the extant literature, namely, media, social impact, and emotions. These factors are reported to have a positive influence on the consumer's purchase intention. First, a descriptive analysis was undertaken followed by an inferential analysis. Structural equation modelling (SEM) was used to test the fitness of the proposed model and also to test the hypotheses. Two out of the total three hypotheses are supported. In this case, media influence and social influence emerged with a significant positive impact on the consumer's purchase intention. Even though emotions influence resulted in a positive impact, it was not statistically significant and does not relate to the consumer's purchase intention in the fashion industry. The findings of this study have significant contribution to the body of knowledge and practice. Marketing research, in general, and consumer research, in particular, will benefit from the contribution of this research. Similarly, policy makers in the fashion industry may adopt the findings of the present study to devise more effective marketing strategies. Indeed, this research highlights that the consumer's purchase intention is not entirely in response to a particular phenomenon but a multitude of so-called "irrational" factors like media, society, and emotions.

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Keywords: Irrational factors, purchase intention, fashion industry, SEM

1. INTRODUCTION

The consumer's perception and attitude have a great impact on purchase intention. In fact, there may be a likelihood of change in the intention following the price or perceived quality and value of the products. Nowadays the mass media targets the intention of customers' purchasing power influencing their emotions, demand, needs and wants. Researchers reckon that there are six stages before consumers decide to buy products. They include product awareness, knowledge, interest, preference, persuasion and purchase (Kotler & Armstrong, 2010; Kawa et al., 2013). There is a belief that the purchase intention of a customer greatly depends on the loyalty toward a brand. When a customer is loyal to a particular brand, he or she will buy the product no matter what; even if the price increases or the quality decreases, loyal customers would stick to the brand. So loyal customers are a great asset for companies and help them grow and gain profitability. However, the quality of the product is an important factor determining the purchase intention. Through continuous improvement and by upgrading the product quality, the sales performance of the product could be increased while increasing the customer's satisfaction and loyalty. Also, the packaging of the product plays a role in attracting the customer's attention.

Different aspects and changes in the product packaging can yield higher sales of the product, which may even lead to impulsive purchases. Pricing of products leads to a fair decision to buy the product and satisfy customers within their budget. Promoting the product through advertisement helps to grab the attention of customers and create a bond with them to develop positive responses and at times irrational behaviours from them. Irrational behaviour is not determined through logical conception. The irrational purchasing decision of a customer does not depend on rational considerations like product utility maximization, budget constraints or self-discipline. The irrational purchasing behaviours of consumers are reflected by the effect of framing, preference reversal and so on. This may result in impulsive, compulsive, or excessive buying.

1.1. Objectives of the study

The main objective of the study is to investigate irrational factors which impact the purchase intention. This is broken down into three distinct research objectives (RO) as follows:

RO1: To investigate the impact of media influence on the purchase intention.
RO2: To examine the impact of social influence on the purchase intention.
RO3: To investigate the impact of emotions influence on the purchase intention.

1.2. Research Questions (RQ)

RQ1: What is the impact of media influence on the purchase intention?
RQ2: What is the impact of social influence on the purchase intention?
RQ3: What is the impact of emotions influence on the purchase intention?

1.3. Problem Statement

The discovery of neuroeconomics studies on consumers started with the study of consumer behaviour which relates to rational factors like, price, quality and functionality. Business neuroscience primarily describes feelings in a physiological and biological way (Hubert, 2010).

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Neuroeconomics is best defined as an interdisciplinary field that seeks to explain human decision-making, the ability to process multiple alternatives and to act. The human brain is a complex organ and the human decision-making process does not necessarily follow a logical flow of events. On the other hand, science is based on logic but sometimes it needs to rely on emotions and feelings as well. Some neuroeconomics studies have already tried to sketch the correlations of expected utility functions from direct neural measures (Politser, 2008). Hence, neuroeconomics was born and is defined as the convergence of the neural and social sciences, applied to the understanding and prediction of decisions about rewards, such as money, food, information acquisition, physical pleasure or pain, and social interactions. Many of the aforementioned are irrational factors that move a person in a certain direction or make him/her take a decision. It is, therefore, important that marketers should pay attention to such irrational factors which impact consumer behaviours considerably. Marketers should also capitalize those customers' inclinations to attract their targeted customers' attention.

1.4. Significance of the Study

This study helps business organizations and marketers to recognize their customers' mentality and understand their mindsets in order to establish stronger and a more efficient marketer-customer relationship. The study also assists advertisers to improve marketing strategies. Again, the consumer's needs and wants regarding the current fashion era are more clearly analysed by marketers. This helps marketers to evaluate the relevant factors for their products to be implemented in order to maximize the profit. Simultaneously, this study also helps consumers to think over the internal factors before buying their fashion products. Not only that, consumers can analyse how social media has an impact on their decision while buying a fashion product.

2. LITERATURE REVIEW

2.1. Purchase Intention

Purchase intention is planning in advance to buy certain goods or services in the future, not necessarily to implement the purchase intention as it depends on the individual's ability to perform (Warshaw & Davis, 1985, in Qun et al., 2012). Behavioural attitudes and subjective norms are the two most significant predictors of the purchase intention (Summers, Bellueau, & Xu, 2006). As the expected behaviour theory predicts, attitudes toward an act have a positive impact on behavioural intent (Ajzen & Fishbein, 1980). Past literature finds that consumer satisfaction increases with the level of message quality, which leads to higher purchase intention (Park et al., 2007). The predicted result that the customer expects from a certain good or service of a particular company often influences the decision to buy. Also, a nice, credible source suggestion will assist the consumer to buy an item (Padhy & Sawliker, 2018).

Thus, the behaviour of consumers as regards the purchase depends on the product characteristics such as brand name, price, quality, recreation and innovation awareness, mixed with other choices as well as impulsiveness (Leo et al., 2005). According to Bebber et al. (2017), the intention to buy is defined as the inclination and the expectation that a consumer will have to purchase a product and/or a service.

In making the decision to consume certain products, buyers may go through many phases. In the first phase which is the purchase decision phase, people intend to fulfil their basic elements of life, which are needs and wants. In phase two, they start to search for details of products either based on their experiences or information from people around them, media and any related sources regarding the products. Finally, they make the decision to buy the products that satisfy their needs and wants.

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2.2. Media Influence

Media is one of the marketing tools that marketers use to influence their customers to purchase their products as it gives the massive impact on consumers' attitudes and purchasing behaviours towards the brand. It is the main interest of the brands in building and maintaining a long-term relationship with large numbers of customers. Kaplan and Haenlein (2010, p. 61) define social media as "a group of Internet based applications that are built on the ideological and technological foundations of Web 2.0 and allow the creation and exchange of user generated content". Social media is online applications, platforms and media which aim to facilitate interactions, collaborations and the sharing of content (Richter & Koch, 2007).

In time, a brand comes to represent a promise about the goods that it defines, a promise of quality, efficiency or other value dimensions that can influence the choices made by consumers among competing brands. Padhy and Sawlikar (2018) noted that "Marketing messages are also used to convey the brand identity and relevant information related to its products. Making customers aware that you exist helps drive traffic to your company and generate a buzz in the market. With the advent of the Internet and digital media, the importance of brand awareness has become even more important". Brand awareness is viewed with different dimensions, especially when there is a disparity in advertisements using different marketing tools to influence customer behaviour. The industry pattern observed over the last few decades for consumer goods is of a high level of brand awareness among consumers (Murty et al., 2018). Social media has a powerful marketing influence when it comes to providing information about a product in user comparisons. The influence of content and discussion that takes place in social media drives many businesses that use it as a medium of communication and promotion (Perkasa et al., 2020).

Social cognitive theory explains that the usage of trendy imagery that manipulates context in advertising media campaigns greatly influences consumers' buying behaviour. They tend to share information more to influence their peers into buying apparel from the same brands. The message being transmitted, and the medium used for the transmission, must be viewed as independent of the company's control in order for a customer to be considered interested in a word-of-mouth style conversation (Poturak & Softic, 2019). Word of mouth has gained many new names since the arrival of the information technology and the Internet. For example, electronic word of mouth, which is defined as all informal communication aimed at consumers via Internet-based technology relating to the use or characteristics of specific products and services or their sellers (Poturak & Softic, 2019). The findings of research conducted by Prasad et al. (2019) concluded that conviction mediates the effect of social media use and electronic word of mouth (EWOM) on purchasing decision. The credibility of the firm as a brand influences the relationship between EWOM and the intention to buy in such a way that this relationship becomes substantially stronger if there is more positive recognition for the brand. A study by Lee and Workman (2013) maintains that the 'word-of-mouth' advertising plays a big role in influencing fashion consumers. Finally, a high level of satisfaction is said to lead the satisfied customer to spread positive 'word of mouth' about the product or company (Carpenter & Fairhust, 2005; Singh & Pandya, 1991). This is caused by their trust in the 'gossiping' role in their daily lives. This role is included in the concept of some social media applications like Instagram and Twitter, where users tend to post their personal opinions about certain brands. By this, their followers tend to believe their statements which greatly impact their decisions on any type of products including fashion products. Based on the above discussion, it is hypothesized that:

H1: Media influence has a positive impact on the purchase intention.

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2.3. Social Influence

A person's behaviour is influenced by other people around (Tjokrosaputro & Cokki, 2020). It signifies the importance of the society's influence on a person's purchase decisions. Langley et al. (2012) also agree that consumer intention to buy a new product is influenced by the society. It includes providing information about the product, attesting the goodness or badness of a product, and persuading consumers to buy a product. It clearly means that consumers usually do not buy the product only to satisfy their utilitarian needs but also hedonic needs, which in this case is impressing the society or people around the customers. The aforementioned has also been confirmed by Foxall et al. (1998), who argue that consumers prefer to buy those products which can satisfy their basic product-related needs and also improve their status in the society and/or impress others around them. The theory of planned behaviour (Ajzen & Fishbein, 1991) uses subjective norms to represent the same concept adopted in the present study. The same theory has been tested and validated across many countries and industries. Further, researchers (Persaud & Schillo, 2017) conducted research where data were collected from a fairly large sample of 988 respondents to investigate the social influence on the buying intention. The results strongly attest the positive social impact on the buying intention. Lastly, Tjokrosaputro and Cokki (2020) also found a strong positive and significant social influence on customers' purchase intention. Based on the above discussion from the extant literature, it is, therefore, hypothesized that:

H2: Social influence has a positive impact on the purchase intention.

2.4. Emotions Influence

Marketing and emotions are mutually linked in many aspects. Emotions play an important role in dealing with customers and learning their purchasing nature. Emotions can be rational and irrational. This study focuses on the irrational side of emotions. Normally, evaluations of antecedent conditions inherent in an object or event may occur subconsciously or be temporarily inseparable from emotions. Nonetheless, studies have shown that when instructed to do so, people can cognitively reconstruct the cause of emotion (Smith & Ellsworth, 1985). Clearly, many acts harmful to long-term stability are performed in the grip of fear or anger, but perhaps more often in casual disregard or reckless indifference; yet great achievements of mankind have indeed been forged in emotional states of high intensity, by reasoning or by unreasonable insight. The aforementioned may still be accurate, and it provides a useful starting point for understanding neural mechanisms underlying both rational and irrational behaviours (Freeman, 2005). If the strength of the chaotic background activity overwhelms the search trajectories, then closure is premature, and the selected behaviour is sub-optimal and may seem unreasonable and short-sighted – that is, "emotional" in the colloquial sense of the term (Freeman, 1995, 1999). In a one-way causal chain, emotion was hitched like a truck to cognitive appraisal. How would we know what emotion to have unless followed and guided by cognitive appraisal? We would not necessarily, because keeping emotion alive needs allowing it to be irrational (Marc, 2005).

Soodan and Pandey (2016) argue that consumer responses towards different marketing programs cannot be the same and hence differ in terms of consumer actions which are emotional and always stated as irrational. When there is a "buy one get two" offer in a store, the person who was about to purchase one will mostly have this temptation to buy two instead of one. This is a classic example that the extra they got is not what they needed but that they had fallen prey to such marketing techniques. Situational factors are very relatable for us in our daily lives. Feelings, affections, behaviours and thoughts are some of the emotions based on the situation which leads to the physiological changes and purchase intentions.

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Interestingly, in marketing biography, the power of a brand is in its ability to connect with customers' emotions. This is the key to impacting their attitude, which eventually results in enhancing a brand's value and ultimately profitability (Thomson et al., 2005). According to Bowlby (1982), the beginning of emotional connections comes from the idea of behaviourism attachment. Further, impassioned attachment in personality leads to creating strong attachment to others. More than that, from Bowlby's previous research it is found that emotional attachments can come from many factors such as presents (Mick & DeMoss, 1990), collectibles (Slater, 2001) and brands (Park et al., 2010; Schouten & McAlexander, 1995). Incidentally, the latter factor is directly related to this study. However, a customer's attachment might not be active in the power of luxury brand fashion especially in terms of human attraction. Basically, customer behaviourism might impact emotional attachment as well. Therefore, Thomson et al. (2005) believe that emotional attachments are due to love for the brand, the bonding with brands and attractions to brands. All these emotional attachments can be one of the factors for customers to have the power to be bound to the brand and to be loyal to brands as well (Thomson et al., 2005). Adding emotional traits to brand ads will improve customer interaction and distinction, thus improving consumer preference stability (Wang et al., 2019).

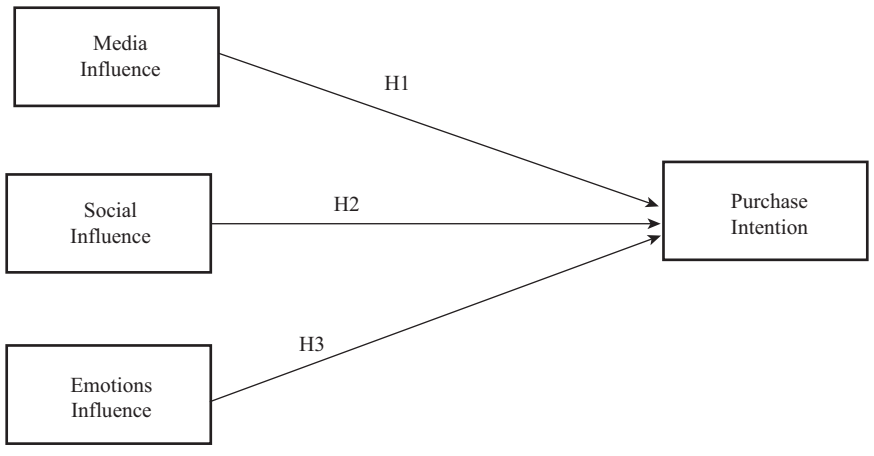
As a matter of fact, Park et al. (2010) believe that the value of emotional attachment is a state of impassioned attachment by emotion and can be a key for forecasting real life purchasing, sharing experience of the purchased brand, and evaluating the brand positively. Later, customers will build the imaginary model of concerted branding, emotional attachment and lastly, they may replace the purchase of a brand with the same type of luxury brand. All the elaborations above are contained in the following hypothesis as:

H3: Emotions influence has a positive impact on the purchase intention.

3. THE MODEL

In essence, all the three hypotheses form the conceptual model of the present study (see Figure 1 below). The three factors that form the basis of the respective hypotheses (H1, H2 and H3) have direct influence on the purchase intention. They are media influence, social influence and emotions influence. This study selected irrational factors that have an impact on the purchase intention of consumers. Fashion products were selected to investigate the conceptual framework mainly due to the fact that consumers are easily influenced by media, society, and emotions when it comes to buying fashion products, as evident from the review of the literature above.

Figure 1
The proposed conceptual model



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4. RESEARCH METHODOLOGY

4.1 Development of Measures

The questionnaire for the present study was developed based on the adapted measures from previous established studies. It was divided into two main sections. The first section of the questionnaire was to collect data on respondents' profile, and the second section was to collect data on the variables of the study: in this case, the three independent variables, namely, media influence, social influence, and emotional influences, and a dependent variable which is purchase intention. In the case of the present paper, items for media influence and social influence are adapted from Shephard et al. (2016), for emotional influence the questions are adapted from Mirza and Abbasi (2016). Lastly, items measuring purchase intention are adapted from Goyal et al. (2013) and Makgosa (2010). Appendix A is provided for the constructs with their measures.

4.2. Population and Sample

The population of the study comprises general consumers of fashion products who have experience of buying products online. In terms of the level of education, the target consumers are of varying educational levels such as high school, diploma, bachelor's degree, master's degree and others. Gender wise, responses were sought from both genders whose ages range from under 25 to more than 50 years old. The study involved 205 respondents who are consumers of fashion products.

Profile of Respondents

Data collected for this study were analysed using descriptive statistical techniques. According to the collected data as shown in Table 1, more than half or 55.6% of the respondents were females, i.e. 114 out of 205 of the total respondents, whereas only 91 (44.4%) male respondents participated in the survey. The respondents' age is divided into five groups which are (<25), (25–30), (36–45), (46–55) and (>56). The majority (82%) of the respondents are youths under 25 years old while the second largest group at 16.6% are those within the 25-30 years age group. This corresponds to the education levels of these two groups, i.e. 66.3% hold a bachelor's degree and high school certificates. This means that the respondents are appropriate because these people are the ones who are fashion-conscious and therefore are the targeted groups of this study. Also the data that were obtained from them depict reliable responses because they are educated and within the vulnerable age groups, hence the hypotheses pertaining to fashion and social, emotions and media influences on them are likely to be true.

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Table 1
Demographic Structure (I)

Demographic Variables		Research Sample (n = 205)	
		Number of Respondents	Percentage (%)
Gender	Female	114	55.6
	Male	91	44.4
Age	<25	168	82.0
	25–35	34	16.6
	36–45	2	1.0
	46–55	0	0.0
	>56	1	0.5
Education	High School	36	17.6
	Diploma	13	16.3
	Bachelor's degree	136	66.3
	Master's degree	16	7.8
	Others	4	2.0

As mentioned, the questionnaire was sent to respondents irrespective of their geographical location, the obtained results also attest the same. In this case, respondents from around 16 countries replied to the survey, but the majority of them are from Malaysia (35.1%), followed by Bangladesh (27.3%) and Egypt (12.7%). Other fewer responses were received from Middle Eastern and South-East Asian countries. It also shows that the results of the present study are influenced mainly by Malaysian, Bangladeshi, and Egyptian respondents, and could be one of the limitations of this study. At the same time, the study can also be considered an avenue for possible research in those countries with fewer responses. Table 2 presents the results of respondents from all the countries.

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Table 2
Demographic Structure (II)

Demographic Variables		Research Sample (n = 205)	
		Number of Respondents	Percentage (%)
Respondents' Nationalities	Algeria	1	0.5
	Australia	1	0.5
	Bangladesh	56	27.3
	Cambodia	7	3.4
	Egypt	26	12.7
	India	16	7.8
	Jordan	2	1.0
	Libya	1	0.5
	Malaysia	72	35.1
	Qatar	1	0.5
	Saudi Arabia	2	1.0
	Syria	1	0.5
	Thailand	11	5.4
	Yemen	6	2.9
	Eritrean	1	0.5
	Myanmar	1	0.5

4.3. Sampling Techniques

A non-probability convenience sampling technique was considered the most appropriate for the present study. In this method, the researchers collect maximum useable responses conveniently using either hard-copy or soft-copy questionnaire distribution methods. Due to many benefits offered by the soft-copy online survey method, the present study also adopted the same. First, a self-administered questionnaire was created using Google Forms and then the link was shared using multiple platforms. A total of 250 questionnaire links were sent to respondents mainly using Whatsapp and Facebook. Out of the total distributed questionnaires, a fairly high number (i.e., 205) was received back and used for the purpose of data analyses.

5. ANALYSIS AND FINDINGS

5.1. Attribute of the Questionnaire

Firstly, it is necessary to ensure the stability and consistency of the research instrument (questionnaire) and its reliability. Therefore, it is essential to conduct the reliability test before proceeding with further analyses. The psychometric properties of the questionnaire were estimated by calculating Cronbach's alpha reliability coefficient and the item-to-total correlation. According to Sekaran (2003), Cronbach's alpha value ranges from 0 to 1 where a value that is closer to 1 refers to its greater stability and consistency. However, for basic research, the threshold value of 0.60 was set by the researchers (see Nunnally, 1978). Table 3 shows that the result of Cronbach's alpha for the instrument used in the current study attains an alpha value of 0.935. Referring to

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Sekaran's guideline, therefore, the questionnaire employed by this study is within the consistency and stability level.

Table 3
Reliability statistics of the questionnaire

Cronbach's alpha	Cronbach's alpha based on standardized items	No. of items
0.935	0.935	37

The next step was to establish the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and conduct Bartlett's test of sphericity. Table 4 shows the results of the tests where the KMO measure of sampling adequacy was 0.884, indicating that the present data are suitable for factor analysis. The result of Bartlett's test of sphericity was also significant at $p < 0.001$, indicating a sufficient correlation between the variables.

Table 4
The KMO and Bartlett's Tests

Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy		.885
Bartlett's Test of Sphericity	Approx. Chi-Square	2431.058
	df	231
	Sig.	.000

5.2. Exploratory Factor Analysis (EFA)

Next, EFA with Varimax rotation was performed to examine unidimensionally the dependent and independent variables in determining the possible underlying factors. All those items which did not satisfy the criteria of above 0.5 loading and below 0.35 cross-loading were deleted. Table 5 presents the results of EFA.

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Table 5
Exploratory Factor Analysis

Items[2] (Variables)	Rotated Component Matrix			
	Components			
	Factor 1 Purchase Intention	Factor 2 Media Influence	Factor 3 Social Influence	Factor 4 Emotions Influence
P02	.814			
P01	.803			
P03	.763			
P07	.716			
P05	.679			
P06	.642			
P13	.598			
P09	.553			
P08	.528			
M05		.852		
M02		.740		
M03		.730		
M06		.716		
M01		.532		
S01			.775	
S05			.735	
S04			.731	
S06			.711	
S02			.681	
E05				.754
E02				.583
E04				.567
Initial Eigenvalues	7.961	3.053	1.539	1.215
% of Variance	21.788	15.196	14.588	11.011
Cumulative %	21.788	36.984	51.572	62.538

The above table with the results of EFA clearly indicates a very clean four-factor structure, attesting a strong conceptualisation of the variables. The next step followed was a confirmatory factor analysis (CFA).

5.3. Reliability Test of the Individual Factors

After obtaining a clean EFA result, the individual factors were tested for reliability. This is to ensure that each extract construct is reliable and has acceptable consistency to take it further

[2] Codes with their subsequent items used in this study are provided in Appendix A.

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for conducting CFA. The results clearly show that all the independent and dependent variables extracted are reliable with the Cronbach's alpha value ranging from 0.794 to 0.888. The results are presented in Table 6.

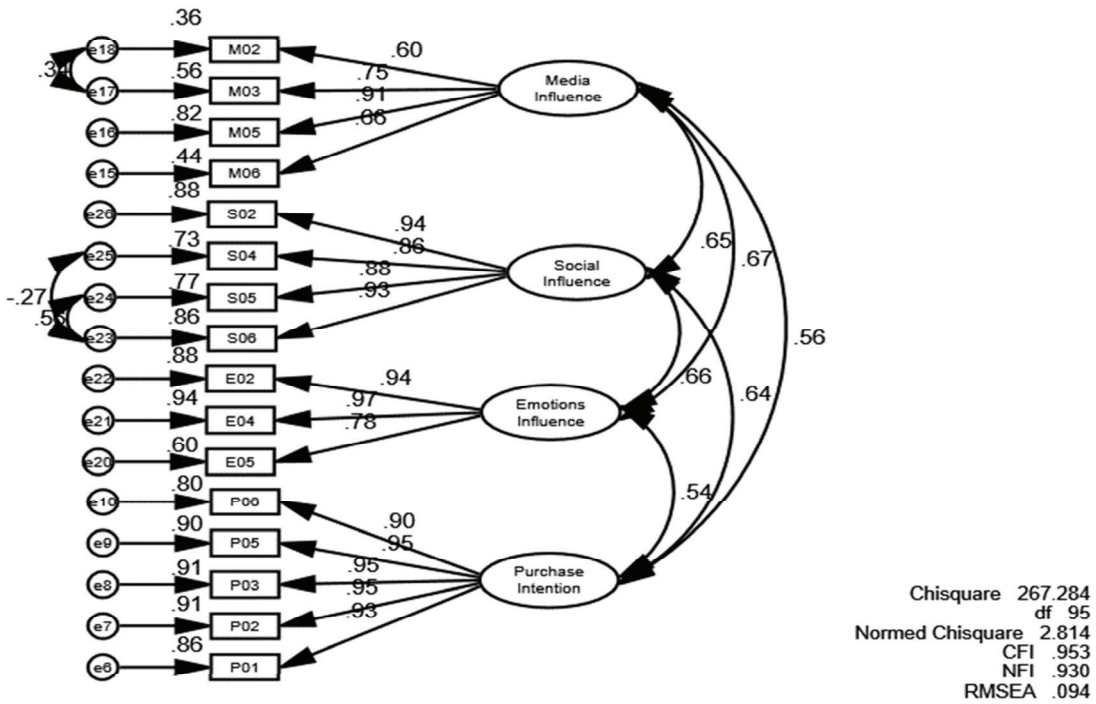
Table 6
Reliability Coefficient of the Extracted Factors

Factor	Number of Cases	Number of Items	Cronbach's Alpha
Purchase Intention	205	9	.888
Media Influence	205	5	.831
Social Influence	205	5	.837
Emotions Influence	205	3	.794

5.4. Confirmatory Factor Analysis (CFA)

As this study adopted a two-step structural equation modelling (SEM) technique, it is important to fit the proposed model in the measurement stage followed by full-fledged fitness. In this case, CFA using AMOS software was undertaken with Maximum Likelihood Estimation (MLE). The fitness of the measurement model was observed keeping in mind fit indices of chi-square (c^2), normed chi-square (c^2/df), the comparative fit index (CFI), the normed fit index (NFI), and the root mean square error of approximation (RMSEA) (Byrne, 2010; Hair et al., 2010; Kline, 2011). Figure 2 highlights the measurement model.

Figure 2
Measurement Model



The above measurement model clearly shows acceptable results with normed chi-square (c^2/df) of 2.814 (which is below the acceptable value of 5.0), CFI value of 0.953 and NFI value of 0.930 (which is above 0.9), and RMSEA value of 0.094, which is also considered acceptable (MacCallum et al., 1996).

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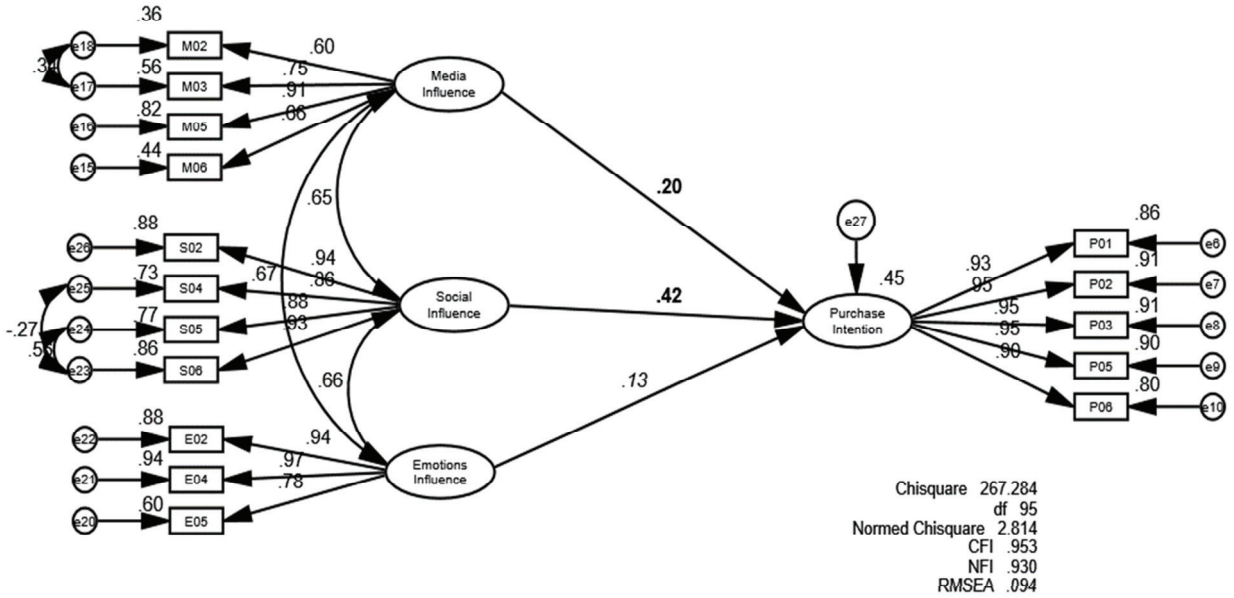
5.5. Full-Fledged Structural Modelling

In this step, first the full-fledged structural model was tested for fitness along with testing the proposed hypotheses. The result of the final structural model is depicted in Figure 3.

Figure 3
Final Structural Model



The above final model resulted in acceptable values, in this case, the normed chi-square value of 2.814, CFI value of 0.953, NFI value of 0.930, and RMSEA value of 0.094. Further, the hypothesis testing was also one of the crucial parts of data analyses. The envisaged hypotheses were tested using the criteria of p value less than 0.001. The results show that two (2) out of three (3) hypotheses were supported keeping in mind both statistical as well as practical significance. Detailed result of hypothesis testing are provided in Table 7.

Table 7
Estimates of the Hypothesised Model

Structural path	Hypothesised Relationship	Std. Reg. Weight	S. E.	C. R.	P
Media influence → Purchase intention	$H1^{S}$	.202	.157	2.186	.029
Social influence → Purchase intention	$H2^{S}$	.419	.085	4.886	***
Emotions influence → Purchase intention	$H3^{NS}$	.131	.113	1.513	.130

Statistic	Suggested	Obtained
Chi-square significance	≥ 0.05	0.000
Normed chi-square (CMIN/*df*)	≤ 5.00	2.814
Comparative fit index (CFI)	≥ 0.90	0.953
Normed fit index (NFI)	≥ 0.90	0.930
Root mean error square of approximation (RMSEA)	≤ 0.08	0.094
S = Supported, NS = Not Supported *** = $p < 0.001$		

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The above results of hypothesis testing show that H1 (Media has a positive impact on the purchase intention) emerged with positive significant results, both statistically and practically. In this case, the standardized regression weight of 0.202 is above the threshold of 0.2 and p value of 0.029 is below the cut-off value of 0.05. Similarly, H2 (The society has a positive impact on the purchase intention) can also be supported with standardized regression weights of 0.419 and p value less than 0.001. This particular hypothesis emerged with a strong causal impact both statistically and practically. The last hypothesis (H3: Emotions have a positive impact on the purchase intention) could not be supported based on the result. However, it should be noted that it also emerged with a positive impact, though not significant.

6. CONCLUSION

The primary purpose of this study was to fathom how media, society, and emotions impact customers' purchase intention and if they take their decisions within a rational process or irrationally. In this study, the subjective factors like emotions, societal values and norms, and sensational media representations in the fashion industry were reviewed and investigated. Thorough quantitative analyses were carried out to analyse all the data collected from 205 respondents. Consequently, it is evident that social and media factors have stronger impacts on purchase intentions of customers in the fashion industry. Interestingly, social influences play a vital role in the consumer's purchase intention, as the results suggest. This is congruent with the findings of Nelson and McLeod (2005) and Tjokrosaputro and Cokki (2020), who emphasized the importance of society and peers for the consumer purchase intention.

Remarkably, the outcome of this study confirmed that there are "irrational factors" which impact purchasing intentions. This includes general public influences and sentiments prevalent in the community, and also marketing by companies using various media, particularly social media. The results of the present research are of prime importance for companies in general and more specifically for companies dealing in fashion products. Perhaps, there are irrational factors that influence peoples' purchase intention, and these companies need to consider these factors for further converting the purchase intention to the purchase decision.

As with any research, there are also some limitations in the present study. For example, this research is quantitative structured research, ignoring personalized responses from the respondents due to the closed-ended structured questionnaire, as used in the present study. Perhaps, qualitative in-depth interviews or focus groups can address this limitation. Further, as evident from the results, the obtained data are from the respondents of many countries. As much as it is considered the strength of this study, it can also be a limitation, because in many countries, the researchers could successfully obtain only one or few complete responses (see Table 2). Lastly, even though the obtained responses are acceptable for data analyses, more useable responses should have been targeted.

This research also suggests that future researchers may adopt the model of the present study and analyse it by collecting data from only one country. This model can also be used by researchers to test it in other industries, especially the hospitality industry. Lastly, future researchers may adopt a qualitative approach, like interviews or focus groups, to validate the findings of the present research.

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References

Ares, M. (2020). Changing classes, changing preferences: How social class mobility affects economic preferences. *West European Politics*, *43*(6), 1211–1237.

Bebber, S., Milan, G.S., De Toni, D., Eberle, L., & Slongo, L.A. (2017). Antecedents of purchase intention in the online context. *Journal of Relationship Marketing*, *16*(1), 82–98.

Blumenstein, E. (2014). *Influencers on consumers' decision making in fashion*. Pearl Academy.

Byrne, B.M. (2010). *Structural equation modeling with AMOS: Basic concepts, applications, and programming* (2nd ed.). New York, NY: Taylor and Francis Group.

Cheung, C.M., & Thadani, D.R. (2012). The impact of electronic word-of-mouth communication: A literature analysis and integrative model. *Decision Support Systems*, *54*(1), 461–470.

Dermody, J., Koenig-Lewis, N., Zhao, A.L., & Hanmer-Lloyd, S. (2018). Appraising the influence of pro-environmental self-identity on sustainable consumption buying and curtailment in emerging markets: Evidence from China and Poland. *Journal of Business Research*, *86*, 333–343.

Ercis, A., & Celik, B. (2018). Impact of value perceptions on luxury purchase intentions: Moderating role of consumer knowledge. *PressAcademia Procedia*, *7*(1), 52–56.

Fishbein, M., & Ajzen, I. (1980). *Understanding attitudes and predicting social behavior*.

Foxall, G., Goldsmith, R., & Brown, S. (1998). *Consumer psychology for marketing*. London: International Thomson Business Press.

Freeman, W.J. (2005). Emotion is from preparatory brain chaos; irrational action is from premature closure. *Behavioral and Brain Sciences*, *28*(2), 204–205.

Freeman, W.J. (1995). *Societies of brains: A neurophysiological study of love and hate*.

Freeman, W.J. (2000). *How brains make up their minds*. Columbia University Press.

Goodman, J. (2019). *Strategic customer service: Managing the customer experience to increase positive word of mouth, build loyalty, and maximize profits*. Amacom.

Goyal, A., Maity, M., Thamizhvanan, A., & Xavier, M.J. (2013). Determinants of customers' online purchase intention: an empirical study in India. *Journal of Indian Business Research*.

Hair, J.F., Black, W.C., Babin, B.J., & Anderson, R.E. (2010). *Multivariate data analysis* (7th ed.). New Jersey: Pearson Prentice Hall.

Hanaysha, J.R. (2018). An examination of the factors affecting consumer's purchase decision in the Malaysian retail market. *PSU Research Review*.

Hubert, M. (2010). Does neuroeconomics give new impetus to economic and consumer research?. *Journal of Economic Psychology*, *31*(5), 812–817.

Jan, M.T., & Abdullah, K. (2014). The impact of technology CSFs on customer satisfaction and the role of trust. *International Journal of Bank Marketing*.

Kim, S., Ham, S., Moon, H., Chua, B.L., & Han, H. (2019). Experience, brand prestige, perceived value (functional, hedonic, social, and financial), and loyalty among GROCERANT customers. *International Journal of Hospitality Management*, *77*, 169–177.

Kim, A.J., & Ko, E. (2012). Do social media marketing activities enhance customer equity? An empirical study of luxury fashion brand. *Journal of Business Research*, *65*(10), 1480–1486.

Kline, R.B. (2011). *Principles and practice of structural equation modeling* (3rd ed.). New York, NY: The Guilford Press.

Krajina, A., & Karalić, V. (2017). Drivers of consumer decision making-comparative analysis of behavioral and neuroeconomics models. In *Regional studies on economic growth, financial economics and management* (pp. 391–400). Cham: Springer.

Langley, D.J., Bijmolt, T.H., Ortt, J.R., & Pals, N. (2012). Determinants of social contagion during new product adoption. *Journal of Product Innovation Management*, *29*(4), 623–638.

Lewis, M.D. (2005). An emerging dialogue among social scientists and neuroscientists on the causal bases of emotion. *Behavioral and Brain Sciences*, *28*(2), 223–234.

Le Xuan, T. (2019). *Digital marketing strategies of luxury fashion brands in China: The Gucci brand*.

Xia, C.O.S., & Wai, S.M. (2019). *An evaluation on the expansion strategies of foreign luxury fashion brands in China luxury industry*.

Lim, X.J., Radzol, A.M., Cheah, J.H., & Wong, M.W. (2017). The impact of social media influencers on purchase intention and the mediation effect of customer attitude. *Asian Journal of Business Research*, *7*(2), 19–36.

MacCallum, R.C., Browne, M.W., & Sugawara, H.M. (1996). Power analysis and determination of sample size for covariance structure modelling. *Psychological Methods*, *1*(2), 130–49.

Makgosa, R. (2010). The influence of vicarious role models on purchase intentions of Botswana teenagers. *Young Consumers*, *11*(4), 307–319.

Mick, D.G., & DeMoss, M. (1990). Self-gifts: Phenomenological insights from four contexts. *Journal of Consumer Research*, *17*(3), 322–332.

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Haq, M.A., & Abbasi, S. (2016). Indirect impact of hedonic consumption and emotions on impulse purchase behavior: A double mediation model. Journal of Management Sciences, 3(2), 108–122.

Murty, A., Udayashankar, A., & Varma, B. (2018). Impact of brand equity on consumer buying behaviour. *Journal of Business and Management*, 30–36.

Padhy, S.K., & Sawlikar, R.K. (2018). The role of brand equity and brand awareness on consumers' purchase intention. *International Journal of Business and Management Invention*, *7*(1), 12–16.

Park, C.W., MacInnis, D.J., Priester, J., Eisingerich, A.B., & Iacobucci, D. (2010). Brand attachment and brand attitude strength: Conceptual and empirical differentiation of two critical brand equity drivers. *Journal of marketing*, *74*(6), 1–17.

Paquette, H. (2013). *Social media as a marketing tool: A literature review*.

Persaud, A., & Schillo, S.R. (2017). Purchasing organic products: Role of social context and consumer innovativeness. *Marketing Intelligence & Planning*.

Perkasa, D.H., Suhendar, I.A., Randyantini, V., & Andrini, E. (2020). The effect of electronic word of mouth (ewom), product quality and price on purchase decisions. *Dinasti International Journal of Education Management and Social Science*, *1*(5), 695–706.

Poturak, M., & Softic, S. (2019). Influence of social media content on consumer purchase intention: Mediation effect of brand equity. *Eurasian Journal of Business and Economics*, 17–43.

Pookulangara, S., & Koesler, K. (2011). Cultural influence on consumers' usage of social networks and its impact on online purchase intentions. *Journal of Retailing and Consumer Services*, *18*(4), 348–354.

Prasad, S., Garg, A., & Saroj, P. (2019). Purchase decision of generation Y in an online environment. *Marketing Intelligence & Planning*, 372–385.

Pronello, C., & Gaborieau, J.B. (2018). Engaging in pro-environment travel behaviour research from a psycho-social perspective: A review of behavioural variables and theories. *Sustainability*, *10*(7), 2412.

Rahim, A., Safin, S.Z., Kheng, L.K., Abas, N., & Ali, S.M. (2016). Factors influencing purchasing intention of smartphone among university students. *Procedia Economics and Finance*, *37*, 245–253.

Rani, P. (2014). Factors influencing consumer behaviour. *International Journal of Current Research and Academic Review*, *2*(9), 52–61.

Royo-Vela, M., & Casamassima, P. (2011). The influence of belonging to virtual brand communities on consumers' affective commitment, satisfaction and word-of-mouth advertising. *Online Information Review*.

Slater, J.S. (2001). Collecting brand loyalty: A comparative analysis of how Coca-Cola and Hallmark use collecting behavior to enhance brand loyalty. *ACR North American Advances*.

Soodan, V., & Pandey, A.C. (2016). Influence of emotions on consumer buying behavior. *Journal of Entrepreneurship, Business and Economics*, *4*(2), 163–181.

Shephard, A., Pookulangara, S., Kinley, T.R., & Josiam, B.M. (2016). Media influence, fashion, and shopping: A gender perspective. *Journal of Fashion Marketing and Management*.

Saleem, A., & Ellahi, A. (2017). Influence of electronic word of mouth on purchase intention of fashion products in social networking websites. *Pakistan Journal of Commerce and Social Sciences (PJCSS)*, *11*(2), 597–622.

Summers, T.A., Belleau, B.D., & Xu, Y. (2006). Predicting purchase intention of a controversial luxury apparel product. *Journal of Fashion Marketing and Management: An International Journal*.

Thomson, M., MacInnis, D.J., & Whan Park, C. (2005). The ties that bind: Measuring the strength of consumers' emotional attachments to brands. *Journal of Consumer Psychology*, 15(1), 77-91.

Tjokrosaputro, M., & Cokki, C. (2020, June). The role of social influence towards purchase intention with value perception as mediator: A study on Starbucks coffee as an environmentally friendly product. In *Proceedings of* the *8th International Conference of Entrepreneurship and Business Management Untar (ICEBM 2019)* (pp. 183–189). Atlantis Press.

Tong, X., Su, J., & Xu, Y. (2018). Brand personality and its impact on brand trust and brand commitment: An empirical study of luxury fashion brands. *International Journal of Fashion Design, Technology and Education*, *11*(2), 196–209.

Wang, M.Y., Zhang, P.Z., Zhou, C.Y., & Lai, N.Y. (2019). Effect of emotion, expectation, and privacy on purchase intention in WeChat health product consumption: The mediating role of trust. *International Journal of Environmental Research and Public Health*, *16*(20), 3861.

Watson, L., & Spence, M.T. (2007). Causes and consequences of emotions on consumer behaviour. *European Journal of Marketing*.

Zhang, B., & Kim, J.H. (2013). Luxury fashion consumption in China: Factors affecting attitude and purchase intent. *Journal of Retailing and Consumer Services*, *20*(1), 68–79.

Zipporah, M.M., & Mberia, H.K. (2014). The effects of celebrity endorsement in advertisements. *International Journal of Academic Research in Economics and Management Sciences*, *3*(5), 178.

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APPENDIX A

CODES AND ITEMS USED IN THE STUDY

CODES	PURCHASE INTENTIONS / ITEMS
P01	I was satisfied with my online shopping
P02	I like online shopping
P03	Online shopping web sites are a fit means to buy products
P04	I buy fewer products from certain companies
P05	I take some of my purchases to other businesses that offer better prices
P06	I encourage relatives or friends to buy certain brands or products
P07	I would recommend brands or products to someone who seeks my advice
P08	I would complain to employees if I see a problem with the company's service or product
P09	I switch to a competitor if I experience a problem with the company's service or product
P10	I will continue to buy products from certain companies even if they increase prices
P11	I will pay more for products even though I could buy them cheaper elsewhere
P12	I will complain to external agencies if I experience problems with a company's service or product
P13	I would complain to other customers if I experience a problem with company's service or product
CODES	**SOCIAL INFLUENCE / ITEMS**
S01	It is important to me that my clothes are of the latest style
S02	A person should try to dress in fashion
S03	I usually dress for fashion
S04	An important part of my life and activities is dressing stylishly
S05	I usually have one or more outfits that are of the very latest fashion
S06	I often try the latest hairstyles when they change
CODES	**EMOTIONS INFLUENCE / ITEMS**
E01	I buy any clothes depending on my satisfactions
E02	I would buy clothes when I am inspired
E03	I am always excited when it comes to new fashion
E04	I want to feel like I am exploring a new world when it comes to a new collection
E05	I want to be offered new experiences
CODES	**MEDIA INFLUENCE / ITEMS**
M01	I am influenced by advertisement on television
M02	I am influenced by advertisement on a billboard
M03	I am influenced to buy clothes which are displayed in a store
M04	I am influenced to buy clothes worn by persons on television programs
M05	I am influenced to buy clothes worn in music videos
M06	I am influenced to buy clothes featured in a catalogue
M07	I am influenced to buy clothes featured in a magazine
M08	I am influenced to buy clothes recommended by a sales associate
M09	I interact with social media a lot in terms of seeking information regarding the fashion industry
M10	The platform of social media has an impact on my purchase decision
M11	Social media platforms enhance the relationship between consumers and the fashion industry
M12	My purchase decision is solely based on the aspect of social media
M13	My purchase decision is associated with how well developed the social media platform of the fashion industry is for delivering proper information

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Perception, acceptability and decision-making determinants of Soft Seltzer, a novel winegrape non-alcoholic carbonated beverage category to health-conscious College students in California

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ABSTRACT

The beverage industry is a significant market that is seeing a growth albeit certain types of beverages such as wine and soda-type drinks are seemingly declining. There is certainly seen a growing interest for novel beverages, especially when creating healthy options aiming to support health via enhanced functional food/beverage properties. Furthermore, understanding how the public perceives and makes purchasing decisions towards novel and unconventional options is of key importance. The Soft Seltzer category is an emerging category defined as a sparkling water-based low calorie, no added sugar, no artificial sweetener, non-alcoholic, carbonated beverage. In our pilot study herein, we aimed to assess interest and willingness to pay for such a product produced in Sonoma, California, specifically H2O/H_2♡, a dealcoholized wine-type beverage enriched with vitamins, potassium, and calcium, using a perception and acceptability study to health-conscious college students in California. Respectivelly, healthy college students were provided an on-line acceptability questionnaire with 38 questions to evaluate the concept of the H2O beverage. Our participants indicated that they would be significantly interested in purchasing such a beverage, while as for willingness to pay, a price for $9.99/4x16oz cans was deemed

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less than or about what is expected from a majority of participants. Our results taken together demonstrate that there is substantial interest and traction for such a beverage, especially given its natural origin and potential health benefits. Further research including tasting and health-related functional properties for the beverage in discussion is suggested. Additionally, lifestyle aspects and nuances beyond alcohol that are important to wine drinkers and other consumers could be delivered by novel beverages, hence aid in their success in the beverage market.

JEL classification: L1, M3, O3, Z1.

Keywords: Consumption, Purchase decision making, Soft Seltzer, Sparkling Water, Wine Grape Infused, Fruit-Flavored Functional Beverage, California Wine Grapes

1. INTRODUCTION

The beverage industry is a significant market within the food industry which has seen interesting trends in the recent years. More specifically, while the industry seems to be growing overall, the alcoholic portion, as well as the soft drink portion of the industry, both appear to be declining. These observations strengthen the notion that the modern consumers have different requirements and expectations from the beverages available on the market. It is therefore important to understand how the public perceives and makes purchasing decisions towards such options.

Furthermore, average calorie intake for Americans over the age of two increased by 150–300 kcal/day, depending on age and sex, between 1970–2000, and it has been estimated that as much as 50% of this intake could be due to the consumption of calorie-dense beverages (Popkin et al., 2006; de Ruyter et al., 2012; Jin et al., 2012; Papandreou et al., 2012; Welsh et al., 2011; JN et al., 2005; Durão et al, 2015; Mirmiran et al, 2014). In this regard, there is significant concern as per the consumption of energy-dense, often simultaneously no- or low-nutrient, beverages that may be contributors to obesity and subsequently related metabolic diseases mainly Type 2 Diabetes Mellitus (T2DM), cardiovascular disease (CVD) or cancer (de Ruyter et al., 2012; Jin et al., 2012; Papandreou et al., 2012; Welsh et al., 2011; JN et al., 2005; Durão et al, 2015; Mirmiran et al, 2014; Vilela et al., 2014; Yari et al., 2020; Chandran et al., 2014; Sikalidis et al., 2013).

In the US, from 1999-2000 to 2009-2010 the consumption of sugar-sweetened beverages (SSBs) declined in both youth and adult population (by 68 and 45 kcal/day respectively) (Rehm et al., 2016, Kit et al., 2013). Diet beverages or beverages containing low calorie sweeteners (LCS), i.e. sweeteners of high intensity approved or not objected by the US Food and Drug Administration (FDA), thus few to no calories, have emerged as a preferred alternative for consumers in the light of robust and abundant evidence linking SSBs to weight gain and other adverse health effects (Johnson et al., 2018). However, replacing SSBs with LCS beverages is controversial due to potential safety concerns such as increased risk of certain cancers with prolonged and heavy consumption of artificial sweeteners (Mishra et al., 2015), and inconclusive evidence on health effects related to obesity, diabetes and cardiovascular disease (Pereira et al., 2013).

In 2018, alcohol consumption fell by 1.5% on a global scale, according to the International Wine Spirits Record (IWSR, 2019). Consumers are apparently engaging in reduced-alcohol choices, a behavior that encourages the development of drinks, targeting both abstemious and consumers aiming to reduce their overall alcohol intake. Hence, this beverage category has evolved beyond soft drinks or orange juice as an alternative for these consumers during social occasions (IWSR, 2019; Colbert, 2019). According to a recent report by Klynveld Peat Marwick Goerdeler International Cooperative (KPMG), a global network providing financial services

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(Colbert, 2019) as well as mounting evidence (Pharis et al., 2018; Hua et al., 2017; Jones et al., 2019), modern consumers place an increasingly significant focus on health and wellness, thus are willing to try new and healthier alternatives to traditional soft drinks and alcoholic beverages.

Sparkling water-based beverages constitute a good alternative that when enhanced with bioactive compounds can meet these requirements. Therefore, healthy drinks such as "plant-based" waters seem to be gaining popularity, as opposed to SSBs (Colbert, 2019; Pharis et al., 2018; Hua et al., 2017). According to National Health and Nutrition Examination Survey (NHANES) data from 1999 through 2014, consumption of SSBs and LCS beverages in US adults (20+years) as well as children and adolescents (2-19 years) has been decreasing. Similar decreasing trends were observed for SSBs in the Youth Risk Behavior Survey, with a daily soda consumption in high-school students decreasing from 2007 through 2015 (33.8% to 20.4%) (Johnson et al., 2018).

In Canada, a comparison between 2004 and 2015, indicated that the reported volumes of beverages consumed decreased by 10%, with energy intake from beverages decreasing by 24%. More specifically, significant decreases were noted for 100% juice, plain milk, SSBs, diet or low-calorie beverages, and other unsweetened beverages, along with a 10% increase of the volume of plain water consumed, after adjustment for socio-demographic characteristics. Intake of alcoholic, diet or light beverages did not change significantly over time (Jones et al., 2019). Interestingly, the increase in water consumption is in line with national recommendations as Canada's Food Guide recommends water as the best choice for hydration (Government of Canada, 2020).

The Dietary Guidelines for Americans provide limited recommendations for beverages except for milk, 100% fruit juice, and alcohol (Food and Nutrition, 2020). It is proposed that guidance on beverage consumption could aid in the development of better consumer products such as beverages lower in sugar, and dense in nutrients and phytonutrients. Furthermore, appropriate beverage choices based on guidance, could address existing nutrient gaps (including lower than recommended intakes of calcium in women, potassium, vitamins A, C and D from diet alone), improve intake of phytonutrients with documented health benefits, and reduce risk for chronic disease (Ferruzzi et al., 2020).

Innovative beverage products that fulfil health and wellness support, premiumization, convenience and sustainability seem to be addressing the primary modern customer desires (Sikalidis, 2019). Therefore, design and development of beverages that support wellbeing, are non-alcoholic and low-calorie without significant artificial compound burden, may be particularly attractive to the modern consumer. Such products can address the needs of individuals with specific needs due to metabolic disease (i.e.: Type 2 Diabetes Mellitus, Hypertension), age or life-stage (i.e.: youth, pregnancy, lactation), exercising while employing a specific training regime (athletes), adhering to religious practices (lent, fasting) or are in a process of rehabilitation and/or alcohol abstinence. The modern approach for novel products in the beverage sector aims to address consumers with strong statements/beliefs such as veganism, non-GMO, ecologically and sustainability sensitive (Sikalidis, 2019). Moreover, health-conscious individuals who do not necessarily belong to any of the aforementioned categories can also benefit from such products. In this context however, understanding the drivers of acceptability for novel beverages especially when these represent a new beverage category, particularly when no prior information or pre-conceived notion are available is rather challenging, yet of key importance for the optimal introduction of innovation in a way that will respect and benefit the consumer the most (Sikalidis, 2019; Silva et al., 2016).

In our study herein, we evaluated consumer predisposition and acceptability of a novel sparkling water-based beverage the H2O (H_2♡) Sonoma Soft Seltzer line, a sparkling beverage infused with the juice of 100% California varietal wine grapes, premium California dealcoholized wine, natural flavor extracts, and pure water from an artesian well aquifer (supplement: Figure S1) at a Sonoma Valley vineyard. Furthermore, we inquired about the main criteria driving consumer

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purchasing decisions for beverages. The beverage in discussion is a novel concept product and the Soft Seltzer category is actually defined by this product as there is nothing similar in the market hence the novelty. We hypothesized that the beverage tested would be perceived positively due to its significant elements of innovation and potential for promoting healthy living and wellbeing in accordance with sustainable practices.

For our assessment, we developed a questionnaire and delivered it blindly to young college students previously enrolled in a Nutrition class, as this is a population that can constitute a potentially health conscious demographic group interested in novel healthier beverages and/or a demanding audience in accepting such type of products compared to the general population. We additionally included a set of open-ended questions aiming to indicate the major criteria driving the selection decision in the case of beverage purchases by the same population.

2. REVIEW OF CONSUMER BEHAVIOR AND PURCHASING

2.1. Background

It is necessary to identify the ideal consumer market when generating a novel product, especially considering the constant evolution of the market. The most typical approach in doing so is a consumer survey to analyze preference, motives behind purchasing, and potential consumer base and interest. A brief review examining consumer behavior in the food and beverage industry, including major drivers for purchase and major determinants of consumer attitudes, will be discussed herein.

2.2. Nutritional Knowledge and Purchasing Behavior

The International Food Information Council and American Heart Foundation state that 43% of Americans claim to always be on the lookout for healthy options when grocery shopping, whereas 52% stated to at least occasionally look for healthy foods (Buchholz, 2019), meaning that almost all Americans sometimes look for healthy foods. Therefore, marketing towards this desire is key to garner consumer interest. A comprehensive review by Wills et al. on the attitudes and purchasing habits as influenced by health claims in European consumers indicated that, consumer responses vary significantly based on the nature of product, the mode of health claim, and functional/active ingredient emphasized (Wills et al., 2012). However, there tends to be a gap in the want for healthy foods and overall nutrition knowledge, and general knowledge can be assumed to be greater than it truly is. In a study conducted in Switzerland, consumer knowledge of a healthy diet was analyzed. 1,043 survey participants were asked 13 nutritional knowledge true/false questions, as well as their typical dietary habits. The questions received between 3% and 38% incorrect responses, illustrating that nutrition misconceptions are much greater than anticipated. It was also found that individuals who consumed more vegetables scored higher, and women, those younger in age, a higher education, nutrition related qualifications, and not being on a diet all resulted in higher scores. Overall interest in nutrition resulted in a higher score, but the error of perceived healthiness was still present, highlighting the need for increased nutritional education for the general public (Dickson-Spillman et al., 2011). This is also of interest when considering marketing, as health and nutrition claims tend to be highly valued when purchasing food and beverages.

In a study conducted in Italy, 504 participants were asked about grocery buying habits, including interest in nutrition and health claims, knowledge surrounding those claims, and general product interest when shopping. Questions were provided online in a survey format. It was found that 33% of participants stated that they were influenced in their choices by health reasons, and

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33% pay attention to nutrition labels while shopping. Only 29% often considered health claims. Overall, participants had a low knowledge of nutritional index. When referring to specific health claims, it was found that many interviewees did not know the true meaning behind these claims. It was therefore concluded that while there is interest in these health and nutrition claims, it is necessary to present them to the consumer in a way that is easier to understand. This may also result in increased interest, as it appeals to a wider consumer base (Annunziata et al., 2019).

Bechoff et al. (2014) assessed the relationship between anthocyanins and sensory acceptability of various hibiscus drinks. Hibiscus drinks are popular due to their antioxidant activity, imparted on the beverage by anthocyanin activity. Four drinks were provided to 160 total volunteers. Two of the drinks were infusions and two were syrup based. Consumer preference was then measured using a 9-point hedonic scale for appearance, taste, and overall acceptance. Physical and chemical analysis was also performed to determine acidity, total soluble solids, phenolic content, and anthocyanin levels. 43% of consumers preferred syrup, 36% preferred infusions, and 21% were indifferent. The syrup acceptance was closely related to sweet taste, whereas acceptability of the infusion was closely related to anthocyanin level. Although the infusions displayed significantly higher levels of anthocyanin, infusion preference scores were lower. However, due to the reduced calories in infusions, the body conscious consumer may prefer infusions regardless, due to decreased caloric value and increased antioxidant potential (Bechoff et al., 2014).

Coffee is typically chosen for its energy effects, but also holds numerous health benefits such as decreased type 2 diabetes and cardiovascular disease risk (Kuriyama et al., 2006, Huxley et al., 2009, Van Dam et al., 2006). However, consumer knowledge of these benefits is not well known. Samoggia and Riedel analyzed consumer perception of coffee's health benefits and its effect on consumption and purchasing motives. 250 participants were asked about coffee drinking and purchasing habits through a survey. It was found that only 25% of consumers were aware of potential benefits, and those aware were typically male (31%), young (30.4%), and employed. The typical consumer primarily drank coffee for energetic effects. It was also found that 74% of consumers were more likely to pay a price premium for coffee with health benefits. Therefore, if coffee is marketed catering to these health effects, it may be beneficial to the market, as there is willingness from consumers to pay more (Samoggia & Riedel, 2019).

Functional foods, defined as food with some added physiologic benefit to enable a consumer to lead a healthier lifestyle without changing eating habits, tend to have mixed reception and understanding. Bech-Larson et al. investigated consumer perception of functional foods in Danish, Finnish, and American consumers. Background knowledge on processing, enrichment methods, health claims, and types of food were analyzed to determine specifically what changes consumer perception. 500 households/country were selected, and the individual responsible for buying groceries was interviewed. 24 standard full profile stimuli were generated, which were then rated on a 7 point scale of perceived healthiness. It was found that Danish and Finnish consumers responded more negatively towards genetically modified foods, whereas Finnish consumers responded more positively towards functional foods. Overall, there was little difference in regards to determinants of the perception of healthiness of functional foods. There were also only minor changes in reception from country to country, meaning cultural values are mildly associated. It was found that the nutritional qualities of the base product were the most important for reception, and it is therefore beneficial to use a base product that is already perceived as healthy when trying to market a functional food (Bech-Larson et al., 2003).

In a second study investigating functional foods, Sparke et al. aimed to analyze consumer motivation to purchase or refuse functional foods. Surveys were conducted in Germany, Poland, Spain, and the United Kingdom, and 590 total respondents participated. Cluster segmentation resulted in 8 consumer segments of purchasing influence for functional orange juice. It was found that fruit content was the most important (31%), followed by packaging and enrichment with dietary fiber (21% and 13%, respectively). Color was of least importance (6%). While the

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emphasis on fruit content reestablishes the need for a highly regarded nutritional baseline product (Bech-Larson et al., 2003), it illustrates that other factors, such as packaging, are of interest as well (Sparke et al., 2009).

Consumer acceptance of functional foods was evaluated in China and Germany and compared to one another to determine marketing needs by country. A group of 502 German consumers and one of 443 Chinese consumers were asked about willingness to buy a functional food over a regular one (ie. yogurt with the ability to decrease cardiovascular disease in comparison to yogurt). It was found that German consumers were much less willing to purchase functional foods, with willingness falling between 16.3% and 28.9%, depending on the question and product. Chinese participants were up to 65% more likely to purchase a functional food. It was believed that German participants did not trust that the food would be as tasty or would deliver in terms of the advertised benefits. However, in both China and Germany it was stated that health motivations were among the biggest influencers for acceptance. It is evident that altering marketing strategy by country is vital, and the demand for healthier products tends to be apparent across countries (Siegrist et al., 2015).

2.3. Factors Outside of Nutritional Knowledge

While nutrition tends to be a considerable factor in food purchasing, especially in America, it is not the only driver. Several other factors, such as price, knowledge behind processing technology, and packaging have been found to be equally as important for marketing a new product.

In a study investigating the drivers of acceptance of a new beverage in Europe, it was found that packaging, product color, and price were among the most influential choice attributes. Silva et al. investigated the acceptance of a traditional African beverage made from Bissap, highly regarded for its health benefits and antioxidant properties. Three focus groups, each with 22 participants, were asked to identify the flavor and sensory profile of beverages made from Bissap, and were then asked about reasoning behind purchase. It was found that Bissap would be selected due to health perception and novelty, and the ideal profile would be €0.99/L, <18kcal/100mL, packaged in tetra-pack, a light red color, and for the labeling information to include information about antioxidants and Bissap. Price sensitive, body concerned, and packaging attracted clusters were identified as the most influential choice attributes, illustrating that while nutrition is present, there are other factors as well (Silva et al., 2016).

Abadio Finco et al. evaluated consumer intention to purchase of pineapple juice, with an interest in packaging and manufacturing processes. 96 consumers were informed on processing techniques, and were then asked about five purchasing attributes: 1) information on manufacturing process, 2) product definition, 3) product information, 4) price, 5) brand name. It was found that brand name and price had the highest relative importance. Information on processing was determined to be an advantage to consumers as well. Therefore, it is evident that packaging and brand trust must also be considered when developing a product (Abadio Finco et al., 2010).

Similarly, Jalloh et al. studied consumer perceptions and purchasing reasons behind packaged water products in Sierra Leone to attempt to improve drinking water in the area. 25 focus groups were established, with 178 total consumers participating. Overall, packaged water was perceived as safe, accessible, and convenient, and more hygienic than alternative options. However, for those living outside the city, cost was reported as a major barrier. Brand trust was also a key factor, and personal feelings towards brands affected purchasing significantly (Jalloh et al., 2018). This again illustrates the importance of a respected brand. If a product is released under an untrusted brand, it is less likely to do well, simply due to the lack of reliance.

Quester et al. investigated the interest in 10 hypothetical wine products and the reasoning behind interest and willingness to purchase. Wine region, price, grape variety, and wine style were ranked in terms of importance by 303 consumers. Wine region was not found to be a significant

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factor, whereas price was deemed to be the most important factor when purchasing. Grape variety and wine style were also significant factors. Therefore, it is essential to create a targeted approach when marketing to attract consumers to a wine style at an optimal price (Quester et al., 1998).

It is evident that packaging is of interest for consumers, and it is likely that a well designed package will garner consumer interest. However, one area of packaging that tends to be overlooked is the environmental component. Birgelen et al. surveyed 176 German respondents to investigate ecological considerations in consumers. This study focused specifically on beverage packaging. It was found that among the 6 attributes surveyed (price, taste, healthiness, availability, ease of carrying, design), only taste and price had to be fulfilled before environmental packaging became an issue. It was stated that there is a misconception behind environmental packaging, and a belief that only a minority of consumers actively seek out environmentally friendly packaging. It is apparent that this is not the case, as this packaging ranked high in terms of importance. While good packaging is important, it is also necessary to know the market and cater to what is desired. While these results are specific to Germany, similar surveys in the products respective country may be of interest to determine demand (Birgelen et al., 2008).

Summary

Coclusively, it is evident that consumer acceptability and preference is multifactorial, and all factors must be considered when marketing a novel product. For the food and beverage market, nutritional claims and values are well regarded, especially in America, and should therefore be of priority. Well designed packaging that effectively highlights the nutritional values is key, and if the packaging allows, a background educating consumers on those claims may be beneficial as well. Lack of education regarding nutrition and misconceptions appears to be a large setback, particularly in the functional foods sector. Brand trust is also essential, as consumers generate images surrounding brands that can be difficult to alter. Finally, engaging in the market and analyzing trends is vital, such as the case with environmentally friendly packaging. Due to ever changing trends, consumer preference tests continue to be integral to identify groups of consumers that can be marketed to the most effectively.

3. MATERIALS AND METHODS

3.1. Beverage assessed and related emerging markets

The beverage assessed is the H2O/H_2♡ Sonoma Soft Seltzer, as shown in Image 1, a sparkling water-based beverage that is infused with the juice of 100% California varietal wine grapes, premium California dealcoholized wine, natural flavor extracts, added electrolytes and vitamins, using pure water from an artesian well aquifer located at a Sonoma Valley vineyard. This is a non-alcoholic drink without artificial flavors, no detectable sulfites, gluten-free, vegan-friendly, without added sugars, artificial sweeteners, GMOs, and fat-free. A small amount of carbohydrate is present due the natural sugars found in the wine grape juice used to infuse the beverage (Robert Rex, 2020).

H2O is the first of its kind in that no other Soft Seltzer on the market is non-alcoholic in wine flavor with natural flavor extracts *and* dealcoholized wine. Contingent upon consumers' unique determinants for purchase, comparable beverages may include: Sipp Eco Beverage and Co, Kin Spritz chili and pomegranate juice or Proposition Co. zero proof nonalcoholic cocktails. *Sipp Eco* similarly advertises itself as a soft seltzer made from green coffee beans and agave nectar, sold at $25 for a 12-pack. Similar to H2O, they advertise their product as “low in calories, made exclusively with clean, organic ingredients, antioxidants and Vitamin C.” Next, *Kin Spritz* is

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advertised as a sparkling citrus beverage which touts the benefits of creating a "lifted mind, relaxed mind and kindred spirit," priced at $27 for a 4-pack. Among the highlighted ingredients are the adaptogen Rhodiola Rosea and nootropics including "GABA, Caffeine, 5-HTP, citicoline, and tyrosine (which) support neurotransmitters in charge of mood, pleasure, and reward for a boost of social stamina." Finally, *Proposition Co*. zero proof nonalcoholic cocktails may appear comparable to the consumer who is attracted to H2O for its wine taste but with zero alcoholic content. At $34 for a 6-pack case, Proposition Co. makes 3 flavors and emphasizes the beverages are "better-for-you alternatives crafted with organically sourced blood oranges, ashwagandha, bitter roots, mountain herms and all-natural botanical hemp extract". H2O is a pioneer in the field of Soft Seltzers as overall purchase of alcoholic beverages and soda continues to collectively decrease; No other beverage on the market appears to match in nutritional value and the high-quality ingredient sourcing as the Sonoma Valley vineyards used by H2O (Image 1).

Image 1
Presentation of the "H2O/H_2♡ Soft Seltzer" concept to the survey participants with 8 varietal flavors (Pinot Noir; Chardonnay; Zinfandel; Sauvignon Blanc; Cabernet Sauvignon; Moscato; Rosé; Merlot)

3.2. Participants, Questionnaire and Delivery

This was an observational study evaluating consumer predisposition and acceptance of a novel product that included 184 participants in the age-range of 21-24 years old (classified as generation Z), all full-time enrolled College students at California Polytechnic State University in San Luis Obispo, California. The participants were all single, non-smokers, without underlying medical conditions, no known allergies and not taking any medications and were deemed as generally healthy young adult individuals. This student sample was also considered health-conscious (Kraft et al., 1993), indicated by their interest in nutrition by opting for an elective general education nutrition course.

Characteristics of participants are shown on Table 1. The questionnaire developed consisted of 38 questions ranging from basic demographics, to purchasing habits, drivers for determining purchasing behavior for beverages and specific questions pertinent to the beverage in assessment. Questions were audited and selected based on standard Food Science and Nutrition acceptability scales (Cardello A.V. & Jaeger S.R. 2010). Given that the assessment was on a unique product with significant novelty there was not an ideally comparable standard thus associate research assistants utilized flavored sparkling water as a standard of comparison and guidance. Those who conducted the literature review reported facing challenges in findings regarding trends and comparisons to similar products, given the unusual nature of the product.

The questionnaire was developed to evaluate participants' unique determinants for purchase as well as likelihood of purchasing the given product using a five-point Likert scale. Questions

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were both quantitative (including numerical scoring), as well as qualitative in nature, including narrative response. An example of the quantitative questions asked is '*how frequently do you consume sparkling water?'* Conversely, examples of the qualitative questions asked include '*what do you think of the displayed product above?*' and '*how would you read the logo above?'* The delivery of the questionnaire was on-line.

Table 1
Participant profile characteristics

Participants	Sex	(n)	(%)
	Female	148	80.4
	Male	36	19.6
	Total	184	100
Age range (years)		21–24	
Social Media Platform Use Preference	**Platform**	**(n)**	**(%)**
	Instagram	115	62.5
	Snapchat	33	17.9
	Twitter	17	9.3
	TikTok	13	7.1
	YouTube	4	2.2
	Pinterest	1	0.5
	Reddit	1	0.5

3.3. Analysis

Acceptability of foods and beverages is dependent on a multi-factorial array of determinants with varying importance to different consumers. As we were however primarily interested in specific determinants well established, we expressed our data as average frequencies and cumulative agggregates of positive ratings to illustrate consumer predisposition. This is an approach utilized extensively and widely in food/beverage research. Other research groups have used similar approaches in addition to conjoint analysis, in studying consumers' preferences and choice factors with numerous examples including pineapple juice (Abadio Finco et al., 2010), functional foods (Bech-Larsen et al., 2003), organic foods (Mesías et al., 2011) and wines (Gil et al., 1997; Quester et al., 1998).

Statistics

Outputs from the on-line questionnaire were compiled in an excel spreadsheet format. Data processing was performed using SPSS version 23.0 (SPSS Inc., Chicago, IL, USA). Categorical data were expressed as frequencies and percentages.

Ethics

All participants provided their informed consent for inclusion to the study. The study was conducted in accordance with the Declaration of Helsinki, and the protocol was approved by the California Polytechnic State University, Institutional Review Board committee (project protocol identification and approval number: 2020-138).

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Limitations

Given the pilot/exploratory nature of the study, limitations were on-line delivery of the questionnaire without a sensory panel and convenient mode of participant selection. Also the study focused on a particular product which is category defining in the lack of a similar other one. However, that makes at this point more difficult to generalize results, thus while results are valid should be interpreted with caution.

4. RESULTS

With our study presented herein, we aimed to reveal perception attitudes and to identify potential choice characteristics for a novel sparkling water-based beverage infused with wine grape juice and California dealcoholized wine enriched with grape juice natural antioxidants, vitamins B_{12} and C, as well as electrolytes calcium and potassium.

4.1. Consumer-participant profile

Our participants were a group comprised of 184 college students of whom 148 were female (80.5%) and 36 males (19.5%), while their age group was within the 21–24 years age range. They are all non-smokers, with no known allergies or dietary restrictions, not on medication and in good general health. All participants were computer literate and interested in Nutrition and Health as they opted to enroll in an elective introductory Nutrition college-level course prior to participating in the survey. In terms of social media use, the majority were using Instagram (115) followed by Snapchat (33), Twitter (17), TikTok (13), YouTube (4) and Pinterest and Reddit (1 each) (Table 1). Given the characteristics of generation Z and their relationship with technology in terms of making choices and decisions, we wanted to have better insight into the on-line platform preferences of our participants. Generation Z's exposure to the internet, social networks, and mobile devices, formed a context that shaped a hypercognitive generation very savvy with collecting and cross-referencing various sources/types of information and with integrating virtual and offline experiences.

4.2. Participant-consumer habits as per beverage purchasing and consumption

In terms of frequency of soda drink purchasing (including diet versions), over 50% of participants (98/184) indicated on a 0-10 Likert scale (0: never – 10: every day), that they do not buy those types of beverages (0-1 ratings). This response is indicative of the level of health consciousness seen in our participants and possibly an indirect effect of their level of interest and education in Nutrition. In this question, the average was 1.75/10 ± 0.11 ($\bar{x}$ ± SEM). Regarding the frequency of sparkling water consumption, 20/184 participants responded that they consume sparkling water almost every day (8-10 out of maximum 10-point frequency scale), while 58/184 participants responded that they consume sparkling water several times a week. In this question, the average was 3.07/10 ± 0.22 ($\bar{x}$ ± SEM). In a similar question regarding hard-Seltzer consumption frequency, the average was 2.72/10 ± 0.14 ($\bar{x}$ ± SEM). Out of all 184 participants, 68.3% prefer sparkling water with flavor as opposed to non-flavored. When asking on the frequency of beer/wine consumption our participants' average score was 3.10/10 ± 0.12 ($\bar{x}$ ± SEM), while in the question regarding consumption frequency of non-alcoholic beer/wine the respective score was even lower 1.10/10 ± 0.11 ($\bar{x}$ ± SEM) (Table 2).

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Table 2
Consumption frequency of main beverage-type

Beverage type	$\bar{x} \pm$ SEM
Soda	1.75/10 ± 0.11
Sparkling water	3.07/10 ± 0.22
Hard-Seltzer	2.72/10 ± 0.14
Beer/wine (regular)	3.10/10 ± 0.12
Beer/wine (non-alcoholic)	1.10/10 ± 0.11
Participants responded on a 0–10 Likert scale (0: never – 10: every day). Results reported as: mean of scoring values ($\bar{x}$) ± SEM.	

From a wine grape preference perspective the top three choices for red were: Cabernet Sauvignon (27.2% top choice), Pinot Noir (25.0% top choice) and Merlot 12.5% top choice), while for white were: Chardonnay (43.5% top choice), Sauvignon Blanc (18.5% top choice) and Pinot Grigio (16.3% top choice) respectively (Table 3).

Table 3
Participants order of preference for wine-grape varietals (red and white)

Type	Order of varietal ranking	(% chosen varietal top)
Red	1. Cabernet Sauvignon	27.2
	2. Pinot Noir	25.0
	3. Merlot	12.5
	4. Zinfandel	12.0
	5. Malbec	3.2
	6. Syrah	2.7
	7. Sangiovese	2.2
	8. "Other"	15.2
White	1. Chardonnay	43.5
	2. Sauvignon Blanc	18.5
	3. Pinot Grigio	16.3
	4. Moscato	13.1
	5. "Other"	8.6

Among the proposed labels for the H2O beverage, the one for the Rosé was deemed the most attractive (most popular) one. Interestingly, a mere 50% of participants noted that they look at the nutrition label and consider the relevant information when making a purchasing decision for a sparkling water beverage. Questions on frequency of consumption referring to soda-type drinks, sparkling water and hard-Seltzer aimed at discerning the extent to which these products are interesting to our participants, since the beverage tested (H2O / H_2♡) could be characterized as a beverage in the interface of sparkling water, soft beverage and Seltzer.

4.3. Participant-consumer response to H2O/H2♡ beverage

The majority of participants read the logo "H_2♡" as "H2O" recognized/pronounced: "H two oh" (131/184, i.e.: 71.2%) and stated they did not consider the label confusing (129/184, i.e.: 70.1%) (Figure 1). Of all the participants, 71% declared that they would "very likely/yes" purchase H2O, 21.5% responded they would "most likely/maybe" purchase H2O and 7.5% responded "not likely/no". More than half indicated that they would be very interested in drinking/tasting the H2O beverage (Figure 2). In terms of willingness to pay, overall, when asked about the price suggestion

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($ 9.99/ 4×16oz cans) 89/184 indicated that it is "less than expected" while 71/184 indicated that the suggested price was "about what they would expect" for such a product (Figure 2). Interestingly, the overall acceptance of the product increased further when a serving suggestion was presented to participants, arguably indicating that consumers prefer some "introduction/ education" on novel food/beverage concepts, which novel producers may then benefit from. It is worth noting that the particular cohort in this study constitutes a more challenging audience due to the greater attainment of nutrition-based knowledge and the higher level of health consciousness, which may have resulted in increased skepticism towards non-traditional foods and beverages. Additionally, 79% of participants indicated their preference for sparkling water infused with wine grape juice as opposed to infusion with dealcoholized wine (Figure 3). As part of the survey, the participants were asked a series of questions regarding the degree to which certain statements on the beverage packaging contribute to their decision-making process towards selecting and purchasing. These questions are primarily related to health-related issues and can be associated with health and wellbeing, as well as safety. More specifically, participants rated the overall importance of a series of nutritional benefits when purchasing a beverage answering via a Likert scale [least (1) to most (100); $\bar{x} \pm SEM$]. Results were as follows in terms of scoring the importance of each characteristic: No Alcohol: 45/100 ± 2.6, Number of Calories: 62.8/100 ± 2.3, No Artificial Flavors: 52.9/100 ± 2.5, No Sulfites: 39.4/100 ± 2.5, Gluten Free: 23.7/100 ± 2.4, Good Source of Vitamin B_{12}: 42.3/100 ± 2.3, Good Source of Vitamin C: 45.6/100 ± 2.2, Vegan: 24.3/100 ± 2.5, No Added Sugars: 63.5/100 ± 2.4, No Fat: 45.5/100 ± 2.5, No Trans-Fat: 59/100 ± 2.7, No Saturated Fat: 51.6/100 ± 2.6, Non-GMO: 37.5/100 ± 2.6, No Artificial Sweeteners: 56.1/100 ± 2.6, No Cholesterol: 41.3/100 ± 2.6, Electrolytes (Calcium, Ca & Potassium, K): 54/100 ± 2.3 (Table 4).

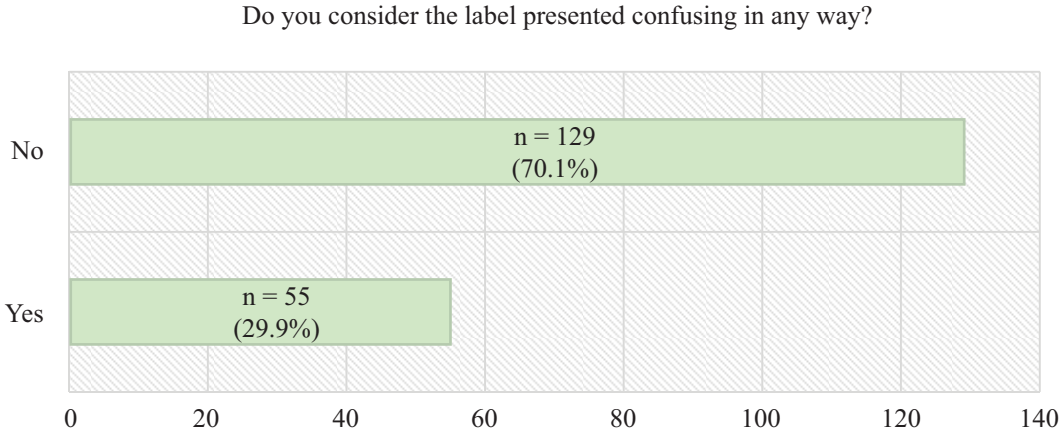

Figure 1
Participants' responses on the clarity of the label presented for "H2O/H_2♡"

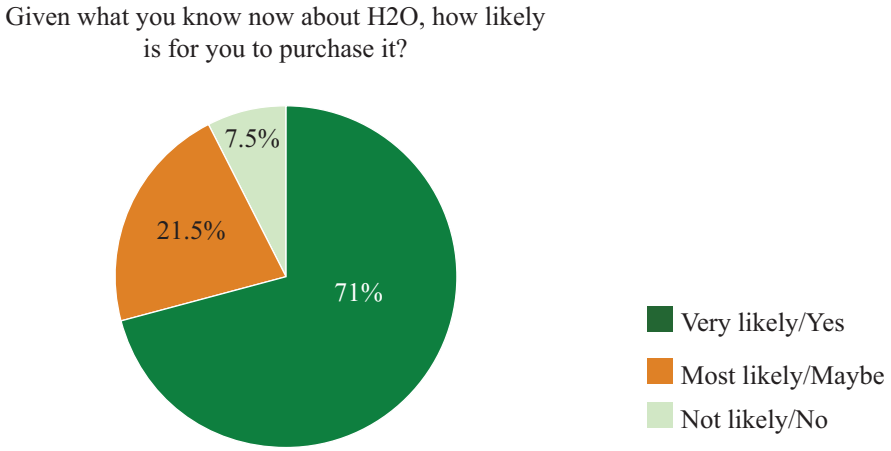

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Figure 2
Willingness to purchase "H2O/H_2♡" at suggested price

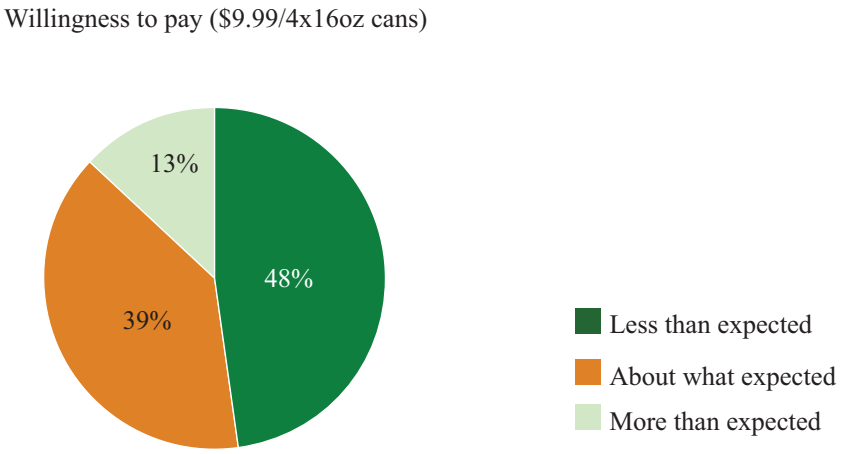

Figure 3
Extract type preference for infusion to "H2O/H_2♡"

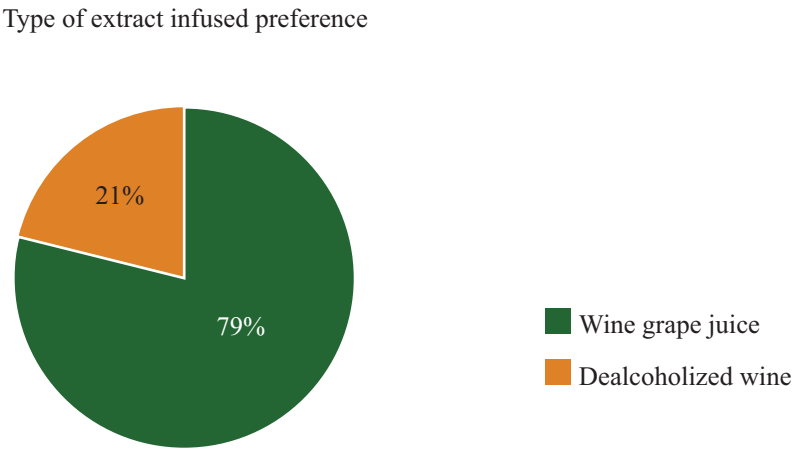

Table 4
Overall importance of nutritional benefits when purchasing a beverage

Statement	$\bar{x}$ ± SEM*	% rating > 50/100**
No Alcohol	45.0 ± 2.6	49.0
Calorie content	62.8 ± 2.3	70.7
No Artificial Flavors	52.9 ± 2.5	57.7
No Sulfites	39.4 ± 2.5	38.1
Gluten-Free	23.7 ± 2.4	24.5
Good Source of Vitamin B_{12}	42.3 ± 2.3	46.2
Good Source of Vitamin C	45.6 ± 2.2	47.3
Vegan	24.3 ± 2.5	26.1
No Added Sugars	63.5 ± 2.4	70.7
No Fat	45.5 ± 2.5	48.9
No Trans Fat	59.0 ± 2.7	62.5
No Saturated Fat	51.6 ± 2.6	54.4
Non-GMO	37.5 ± 2.6	37.5
No Artificial Sweeteners	56.1 ± 2.6	61.4
No Cholesterol	41.3 ± 2.6	43.5
Extra electrolytes (Ca & K)	54.0 ± 2.3	59.8

* Participants responded on a 0-100 Likert scale (0: least – 100: most); results are reported as: scoring mean values ($\bar{x}$) ± SEM.
** Percent of participants who rated the corresponding statement over 50/100.

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Regarding cluster score distributions, participants scored over 50/100 at the following rates: for "no alcohol" 49%, for "calorie content" 70.7%, for "no artificial flavors" 57.7%, for "no sulfites" 38.1%, for "gluten free" 24.5%, for "good source of vitamin B_{12}" 46.2%, for "good source of vitamin C" 47.3%, for "vegan" 26.1%, for "no added sugars" 70.7%, for "no fat" 48.9%, for "no trans-fat" 62.5%, for "no saturated fat" 54.4%, for "non-GMO" 37.5%, for "no artificial sweeteners" 61.4%, for "no cholesterol" 43.5% and for "electrolytes" 59.8% (Table 4).

Finally, participants were asked: "Which of the following best describes your need for such sparkling beverage [least (1) to most (100) $\bar{x} \pm$ SEM]", and were asked to score: Health benefits, Novelty, Thirst, Nutritional Composition, Attractive Package, Drink with a meal/snack/at dinner. In this question, Health benefits received a mean score of 35.7/100 ± 2.2, Novelty was 33.8/100 ± 2.3, Thirst was 32.1/100 ± 2.3, Nutritional composition was 36.8/100 ± 2.3, Attractive packaging was 41.1/100 ± 2.8 and Drink it with a meal/snack/at dinner was 41.0/100 ± 2.5. Interestingly, when looking at the score clustering distributions participants scored over 50/100 at levels of 37.5% for the motivation for purchasing for health benefits, 26.6% for novelty, 33.7% for thirst, 29.9% for nutritional composition, 35.4% for attractive packaging and 42.8% for drink with meal/snack/at dinner (Table 5). Finally, when we asked our cohort as per the personal criteria they use when making decisions regarding beverage purchases, the following ranking was produced: The majority of responses included nutrition/health as the number one criterion, closely followed by taste/flavors and cost/price. Other criteria include occasion/mood of the moment, attractiveness of the package and sustainability practices in the beverage production (supplement: Figure S2).

Table 5
Reason best describing the participants' need for such sparkling beverage [least (1) to most (100)]

Reason selected	$\bar{x} \pm$ SEM*	% of participants rating over 50/100
Health benefit(s)	35.7 ± 2.2	37.5
Novelty	33.8 ± 2.3	26.6
Thirst	32.1 ± 2.3	33.7
Nutritional composition	36.8 ± 2.3	29.9
Attractive package	41.1 ± 2.8	35.4
Drink with a meal/snack/at dinner	41.0 ± 2.5	42.8

*Mean value of 1-100 scores ± SEM.
**Percent of participants who rated the corresponding statement over 50/100.

5. DISCUSSION

In the recent years, there is steadily growing interest in the beverage industry for novel drinks that possess functional characteristics with potential to promote health and be versatile into covering a wide variety of consumer needs and demands. As alcoholic drinks and soda-type drinks are seeing a gradual decline in preference, novel beverage concepts have become more attractive both for consumers and stakeholders. In the pilot study described herein, we evaluated the initial response and acceptability of a novel premium sparkling water-based beverage infused with wine grape extract and dealcoholized wine fortified with vitamins and electrolytes by a potential consumer. The particular beverage was selected because it functions as a novel category defining (that of Soft Seltzer) product (that of Sonoma Soft Seltzer). We distributed an acceptability survey over an on-line platform to 184 healthy and health-conscious College students to discern predisposition towards a novel concept and representative product.

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As discussed in the review, a large contingency in terms of purchase is price. From a practical standpoint, price certainly constitutes a highly important determinant for food choices and purchases (Abadio Finco et al., 2010; Quester et al., 1998, Sparke et al., 2009). Typically, inverse relationships are seen between price and utility/purchase, while more specifically as price increases the utility decreases (Silva et al., 2016), although the regression equation describing that relationship is not always linear. There may be a resistance in the sharpness of the curve whereby a consumer may be willing to pay more if they consider the product worthwhile. Factors that strengthen the willingness of the consumer to pay even a relatively disproportionate rate when considering the price/utility relationship, include health benefits and/or status (Silva et al., 2016). In our study, as the price was asked at the end of the questionnaire and after the participants were familiar with the concept and health/diet related characteristics of the product, they assessed that the product was at a price that generally either considered fair or even lower than expected.

It is also evident that nutritional/health factors, including calorie content, quality of ingredients and constituents that may infer health benefit(s). Low calorie content, lack of artificial flavoring and addition of natural ingredients, as well as vitamins and minerals are generally perceived as healthy and as our results indicated significant importance is placed upon such aspects, thus influencing predisposition of the consumer towards a product, especially when it is new (Silva et al., 2016; Hoefkens et al., 2013; Jalloh et al., 2018; French et al., 2017).

As highlighted in the study by Bechoff et al., body image-conscious consumers prefer lower calorie products and hold that as an important attribute when making a purchase. This is something our results also agree with as our cohort of more educated, nutrition/health literate, young-age, mostly female individuals indicated preference for infusion of juice over dealcoholized wine. Furthermore, our results aligned with those of other studies in that a high value was placed on the antioxidant content and other relevant health-supporting aspects (Silva et al., 2016).

Our results show that our participants have a low tendency towards purchasing soda-type beverages, while they also scored relatively low on the frequency of beer/wine consumption. Nonetheless, more than half consume sparkling water fairly regularly (several times a week to every day). Their profile appears thus more conservative if approached from a dietary and health consciousness standpoint. This finding is interesting as typically, female college students are more knowledgeable than non-college females and males (Bodenlos et al., 2015). Furthermore, when College status is combined with knowledge in the field of Nutrition and Health, health consciousness and conservatism with food and beverage choices due to health and appearance concerns reasonably increases (Food and Nutrition, 2020; Bodenlos et al., 2015). There are several studies indicating that College females tend to be health-conscious (Hawley et al., 2016), while a review of the evidence showed that certain characteristics, such as being Caucasian and educated, increase both health-consciousness and awareness among females (Ramachandran et al., 2016).

Based on our results, we did see increased conservatism with choices and answers as well as interest in health aspects of the product evaluated. Further to this point, our results show that statements in support of health and natural origin of ingredients and functional properties of beverage are particularly valued by the participants. Moreover, if this is combined with the reason/motivation a participant would have to purchase this product, health benefits and packaging are the top-rated reasons. This underscores the emphasis on health and the importance of attractive packaging with regards to design as well as information conveyance. Appearance, packaging and logo presentation clearly constitute important determinants towards purchasing decisions. Interestingly, in certain consumer groups, the packaging information is not as important as health information as reported for the Bissap beverage tested in European consumers in Portugal (Food and Nutrition, 2020, Silva et al., 2016). Other studies also underline the importance of health/functional food properties seen with functional orange juice; whereby packaging information holds a relative importance higher than the promotional health claims

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(Abadio Finco et al., 2010). A potential explanation for such findings is provided by Bech-Larsen and Grunert (2003), proposing that consumers' perception on functional foods healthiness is more based on product's perceived nutritional value than health and other promotional claims *per se* (Bech-Larsen et al., 2003). Nutrition knowledge is considered a necessary, yet not sufficient factor for consumer behavior change (Dickson-Spillmann et al., 2011). Specifically in college students, factors including stress, short sleep durations, financial and time limitations, and lifestyle-related may lead to the development of unhealthy eating habits (Sogari et al., 2018), while the levels of knowledge on nutrition may affect eating habits (Rivera et al., 2020).

Health benefits function as a motivation for purchasing foods and beverages illustrated by Samoggia and Riedel (2019) and Wills (2012). Moreover, health claims are more likely to be seen more positively if associated with an ingredient maintaining an overall positive health perception, while familiarity with the ingredient increases likelihood for purchase. Compared to food items, there appears to be less literature regarding beverages, especially non-alcoholic outside of coffee and tea. Due to the often times minimal regulation, highly variable levels of knowledge paid towards health claims, misinterpretation and confusion regarding the true meaning of health claims is not uncommon (Annunziata et al., 2019). Presenting accurate information to a lay-audience in a friendly manner and with simple terms is important, both for the sake of more appropriately informing the consumer but also for a fair promotion of food and beverage products. In our study, the vast majority of participants did not find the label, logo or information of the product confusing, however we need to note that our participants are nutrition and health literate above average, so they are not necessarily representative of the general public. Our sample characteristics may render them more "demanding" consumers as per the nutritional value of their dietary choices, since having healthy eating knowledge along with current information, nutrition self-efficacy, as well as the opportunity and the motivation can help consumers in making healthy food choices and overall healthier diets (Block et al., 2011).

Consumption of energy drinks in college students has been associated with a higher BMI and unhealthy dietary behaviors including increased soda and frozen meal consumption, and decreased intakes of fruits, vegetables, milk and breakfast (Poulos et al., 2015). In a study of 800 college students in China, SSBs intake was documented to mediate the associations among sleep duration, late chronotype (tendency towards eveningness) and weight gain (Li et al., 2018). In another study of female and male student athletes, it was observed that while student athletes tended to refrain from the use of energy drinks, among those who do consume energy drinks, the level of nutrition knowledge was lower. Such findings indicate the need for nutrition education in student-athletes, specifically for energy drink consumption, since the benefits of their consumption in collegiate athletes is supported by limited evidence only (Hardy et al., 2017). The role the level of nutrition-based knowledge plays in determining beverage preference is evident from our student sample in which young health-conscious consumers reported a lower preference for soda or alcoholic beverages, and a higher preference for healthier beverage choices such as sparkling water.

Conclusively, our results indicate that in a young audience above average in nutrition literacy, the novel concept for a Soft Seltzer (namely a sparkling water-based beverage infused with wine grape juice and California dealcoholized wine, fortified with vitamins and electrolytes) has traction and interest from a conceptual aspect without actual tasting. Given that our audience was characterized by higher health and nutrition awareness and more conservative beverage choice and purchasing behavior, the acceptance rates obtained especially without tasting could be deemed significant thus indicating that a rather large portion of participants are interested in such types of products while with potential further education about potential health benefits, evidence-based findings supporting biological plausibility and introduction to actual products, it is reasonable to expect a further increased acceptability. Furthermore, the fact that our participants are College students, often met with limited financial means, can justify a stricter approach in

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terms of price acceptability and willingness to pay, albeit these rates were still very high in our obtained results. The age group of our participants, although clearly of legal alcohol drinking age, deems the group more likely to look for "actual" alcohol as opposed to "substitutes" if they decide to choose an alcohol-like beverage, which possibly explains the clear preference for wine grape juice infusion as opposed to dealcoholized wine. Finally, it is important to note that these results determine reception to only one brand, and therefore claims cannot be made for all novel products in this category. Overall, our aim for purposely choosing this cohort was to take a more conservative and strict approach so that results could be more robust and safer for the general population.

There is significant potential for further functionality and fortification of those types of beverages with selected amino acids and/or other bioactive compounds either in isolation or mixtures with antioxidant anti-inflammatory properties for improving muscle health and sarcopenia and potentially improving the gut microbiome, as well as hydration status (Maykish et al., 2020; Sikalidis & Maykish, 2020). Research in the field suggests that including other factors related to purchase could provide interesting results. The growth of premium mixers for zero-alcohol beverages made with exotic herbal ingredients seems to be a growing area. A price tag which is reflective of high-quality ingredients was rendered acceptable by consumers. The contemporary consumer is more interested in the story of the food, i.e. fair trade, organic, local, natural, less to minimally processed, authentic, sustainable, eco-friendly, and personalized, often placing a greater emphasis on quality over quantity. Therefore, novel products which combine the above criterion, with the additional potential to support health and wellbeing, are expected to have good traction with the public (Sikalidis, 2019; Sikalidis et al., 2020). The H2O Soft Seltzer as a concept aims to present a non-alcoholic beverage with nutritive value as per vitamins and electrolytes, alternative to alcoholic Hard Seltzer which in most cases provides low to minimal nutritive value. Furthermore, the lifestyle/presentation aspects are important in terms of purchase decisions (supplement: Figure S2). The findings presented here on H2O/ H_2♡ Sonoma Soft Seltzer[1] can provide useful information and guidance for product design and development for novel beverages. Results may be also useful from a nutraceutical standpoint as well as to the beverage industry in general.

6. CONCLUSIONS

The assessment of a novel sparkling water-based beverage infused with wine grape juice and California dealcoholized wine across a young college audience revealed that H2O / H_2♡ Soft Seltzer revealed an interest for its potential health benefits and novelty. The label was determined to be clear, despite being information-dense. Stronger preference was for flavors Cabernet Sauvignon and Chardonnay, while the Rosé label appeared as the most attractive to female participants. The level of acceptability was determined to be significant, especially considering the more conservative characteristics in terms of health consciousness of the participant group and the lack of a tasting session. As wine drinkers often note, the nuances of drinking wine go beyond mere alcohol and are attributed to other grape-derived ingredients. Therefore, beverage suggestions that preserve these desirable characteristics in the absence of alcohol, promoting health and satisfaction while maintaining the lifestyle of the consumer, may strongly claim a well-positioned niche in the preference of consumers.

[1] To better characterize H2O / H_2♡, and describe its niche in terms of category placement, the term Sonoma Soft Seltzer was introduced by Spyridon Zanganas who envisioned the concept of a sparkling water beverage infused with premium California dealcoholized wine, 100% pure California wine-grape juice and natural flavorings qualifying as a non-alcoholic drink [54].

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"Soft Seltzer" and "H_2♡" are both registered trademarks (™) with the United States Patent and Trademark Office (USPTO), under the serial numbers: #88767946 (Soft Seltzer) and #88731521 (H_2♡), respectively. H_2♡ is registered (®) with the #6134847 US registration number. The use of these terms in the manuscript herein is solely done for scientific purposes under the permission of the trademark holder and is not intended for advertisement purposes whatsoever.

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Conflict of Interest

Authors declare no conflict of interest.

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7. REFERENCES

Abadio Finco, F.D.B., Deliza, R., Rosenthal, A., & Silva, C.H.O. (2010). The effect of extrinsic product attributes of pineapple juice on consumer intention to purchase. *Journal of International Food and Agribusiness Marketing*, *22*(1–2), 125–142. https://doi.org/10.1080/08974430903372963

Annunziata, A., & Mariani, A. (2019). Do consumers care about nutrition and health claims? Some evidence from Italy. *Nutrients*, *11*(11). https://doi.org/10.3390/nu11112735

Bech-Larsen, T., & Grunert, K.G. (2003). The perceived healthiness of functional foods: A conjoint study of Danish, Finnish and American consumers' perception of functional foods. *Appetite*, *40*(1), 9–14. https://doi.org/10.1016/S0195-6663(02)00171-X

Bechoff, A., Cissé, M., Fliedel, G., Declemy, A.L., Ayessou, N., Akissoe, N., … Tomlins, K. I. (2014). Relationships between anthocyanins and other compounds and sensory acceptability of Hibiscus drinks. *Food Chemistry*, *148*, 112–119. https://doi.org/10.1016/j.foodchem.2013.09.132

Block, L.G., Grier, S.A., Childers, T.L., Davis, B., Ebert, J.E.J., Kumanyika, S., … Bieshaar, M.N.G.G. (2011). From Nutrients to Nurturance: A Conceptual Introduction to Food Well-Being. *Journal of Public Policy & Marketing*, *30*(1), 5–13. https://doi.org/10.1509/jppm.30.1.5

Bodenlos, J.S., Wells, S.Y., Noonan, M., & Mayrsohn, A. (2015). Facets of dispositional mindfulness and health among college students. *Journal of Alternative and Complementary Medicine*, *21*(10), 645–652. https://doi.org/10.1089/acm.2014.0302

Buchholz, K. (2019). Vast Majority of Americans Interested in Healthy Foods | Statista. *Statista*, 1–5. Retrieved from https://www.statista.com/chart/16796/us-interest-in-healthy-food/

Cardello A.V., Jaeger S.R. (2010) Hedonic measurement for product development: new methods for direct and indirect scaling. Woodhead Publishing Series in Food Science, Technology and Nutrition, Consumer-Driven Innovation in Food and Personal Care Products. Woodhead Publishing. pp 135–174, ISBN 9781845695675.

Chandran, U., McCann, S.E., Zirpoli, G., Gong, Z., Lin, Y., Hong, C.C., … Bandera, E.V. (2014). Intake of energy-dense foods, fast foods, sugary drinks, and breast cancer risk in African American and European American women. *Nutrition and Cancer*, *66*(7), 1187–1199. https://doi.org/10.1080/01635581.2014.951737

Colbert, R. (2019). 5 trends transforming the beverage industry – KPMG Global. Retrieved September 15, 2020, from KPMG website: https://home.kpmg/xx/en/blogs/home/posts/2019/08/five-trends-transforming-the-beverage-industry.html

Davis, J.N., Ventura, E.E., Weigensberg, M.J., Ball, G.D.C., Cruz, M.L., Shaibi, G.Q., & Goran, M.I. (2005). The relation of sugar intake to β cell function in overweight Latino children. *American Journal of Clinical Nutrition*, *82*(5), 1004–1010. https://doi.org/10.1093/ajcn/82.5.1004

DOI: 10.7172/2449-6634.jmcbem.2020.2.3

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de Ruyter, J.C., Olthof, M.R., Seidell, J.C., & Katan, M.B. (2012). A Trial of Sugar-free or Sugar-Sweetened Beverages and Body Weight in Children. *New England Journal of Medicine*, *367*(15), 1397–1406. https://doi.org/10.1056/NEJMoa1203034

Dickson-Spillmann, M., & Siegrist, M. (2011). Consumers' knowledge of healthy diets and its correlation with dietary behaviour. *Journal of Human Nutrition and Dietetics*, *24*(1), 54–60. https://doi.org/10.1111/j.1365-277X.2010.01124.x

Durão, C., Severo, M., Oliveira, A., Moreira, P., Guerra, A., Barros, H., & Lopes, C. (2015). Evaluating the effect of energy-dense foods consumption on preschool children's body mass index: a prospective analysis from 2 to 4 years of age. *European Journal of Nutrition*, *54*(5), 835–843. https://doi.org/10.1007/s00394-014-0762-4

Ferruzzi, M.G., Tanprasertsuk, J., Kris-Etherton, P., Weaver, C.M., & Johnson, E.J. (2020). Perspective: The Role of Beverages as a Source of Nutrients and Phytonutrients. *Advances in Nutrition (Bethesda, Md.)*, *11*(3), 507–523. https://doi.org/10.1093/advances/nmz115

Food & Nutrition | health.gov. (n.d.). Retrieved September 15, 2020, from https://health.gov/our-work/food-nutrition

French, S.A., Rydell, S.A., Mitchell, N.R., Michael Oakes, J., Elbel, B., & Harnack, L. (2017). Financial incentives and purchase restrictions in a food benefit program affect the types of foods and beverages purchased: Results from a randomized trial. *International Journal of Behavioral Nutrition and Physical Activity*, *14*(1). https://doi.org/10.1186/s12966-017-0585-9

Gil, J.M., & Sánchez, M. (1997). Consumer preferences for wine attributes: A conjoint approach. *British Food Journal*, *99*(1), 3–11. https://doi.org/10.1108/00070709710158825

Government of Canada. (2019). Healthy eating habits – Canada's Food Guide. Retrieved September 15, 2020, from https://food-guide.canada.ca/en/healthy-eating-habits/

Hardy, R., Kliemann, N., Evansen, T., & Brand, J. (2017). Relationship Between Energy Drink Consumption and Nutrition Knowledge in Student-Athletes. *Journal of Nutrition Education and Behavior*, *49*(1), 19–26.e1. https://doi.org/10.1016/j.jneb.2016.08.008

Hawley, L.D., MacDonald, M.G., Wallace, E.H., Smith, J., Wummel, B., & Wren, P.A. (2016). Baseline assessment of campus-wide general health status and mental health: Opportunity for tailored suicide prevention and mental health awareness programming. *Journal of American College Health*, *64*(3), 174–183. https://doi.org/10.1080/07448481.2015.1085059

Hoefkens, C., & Verbeke, W. (2013). Consumers' Health-Related Motive Orientations and Reactions to Claims about Dietary Calcium. *Nutrients*, *5*(1), 82–96. https://doi.org/10.3390/nu5010082

Hua, S.V., Kimmel, L., Van Emmenes, M., Taherian, R., Remer, G., Millman, A., & Ickovics, J.R. (2017). Health Promotion and Healthier Products Increase Vending Purchases: A Randomized Factorial Trial. *Journal of the Academy of Nutrition and Dietetics*, *117*(7), 1057–1065. https://doi.org/10.1016/j.jand.2016.12.006

IWSR. (2019). Worldwide Alcohol Consumption Declines -1. 6%. *Press Release*, *i*(May), 2019. Retrieved from https://www.theiwsr.com/news-and-comment-worldwide-alcohol-consumption-declines/

Jalloh, M.F., Williams, A.R., Jalloh, M.B., Sengeh, P., Saquee, G., & Bartram, J. (2018). Consumer perceptions and purchasing of packaged water products in Sierra Leone. *Pan African Medical Journal*, *30*. https://doi.org/10.11604/pamj.2018.30.262.13676

Jin, R., Le, N.A., Liu, S., Epperson, M.F., Ziegler, T.R., Welsh, J.A., … Vos, M.B. (2012). Children with NAFLD are more sensitive to the adverse metabolic effects of fructose beverages than children without NAFLD. *Journal of Clinical Endocrinology and Metabolism*, *97*(7), E1088-98. https://doi.org/10.1210/jc.2012-1370

Johnson, R.K., Lichtenstein, A.H., Anderson, C.A.M., Carson, J.A., Després, J.-P., Hu, F.B., … Wylie-Rosett, J. (2018). Low-Calorie Sweetened Beverages and Cardiometabolic Health: A Science Advisory From the American Heart Association. *Circulation*, *138*(9), e126–e140. https://doi.org/10.1161/CIR.0000000000000569

Jones, A.C., Kirkpatrick, S.I., & Hammond, D. (2019). Beverage consumption and energy intake among Canadians: Analyses of 2004 and 2015 national dietary intake data. *Nutrition Journal*, *18*(1). https://doi.org/10.1186/s12937-019-0488-5

Kit, B.K., Fakhouri, T.H.I., Park, S., Nielsen, S.J., & Ogden, C.L. (2013). Trends in sugar-sweetened beverage consumption among youth and adults in the United States: 1999-2010. *American Journal of Clinical Nutrition*, *98*(1), 180–188. https://doi.org/10.3945/ajcn.112.057943

Kraft, F.B., & Goodell, P.W. (1993). Identifying the health conscious consumer. Retrieved September 15, 2020, from Journal of Health Care Marketing website: https://pubmed.ncbi.nlm.nih.gov/10129812/

Li, W., Wu, M., Yuan, F., & Zhang, H. (2018). Sugary beverage consumption mediates the relationship between late chronotype, sleep duration, and weight increase among undergraduates: A cross-sectional study. *Environmental Health and Preventive Medicine*, *23*(1). https://doi.org/10.1186/s12199-018-0754-8

Maykish, A., & Sikalidis, A.K. (2020, March 1). Utilization of hydroxyl-methyl butyrate, leucine, glutamine and arginine supplementation in nutritional management of sarcopenia—implications and clinical considerations for type 2 diabetes mellitus risk modulation. *Journal of Personalized Medicine*, Vol. 10. https://doi.org/10.3390/jpm10010019

DOI: 10.7172/2449-6634.jmcbem.2020.2.3

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Mesías, F.J., Martínez-Carrasco, F., Martínez, J.M., & Gaspar, P. (2011). Functional and organic eggs as an alternative to conventional production: A conjoint analysis of consumers' preferences. *Journal of the Science of Food and Agriculture*, *91*(3), 532–538. https://doi.org/10.1002/jsfa.4217

Mirmiran, P., Bahadoran, Z., Delshad, H., & Azizi, F. (2014). Effects of energy-dense nutrient-poor snacks on the incidence of metabolic syndrome: A prospective approach in Tehran Lipid and Glucose Study. *Nutrition*, *30*(5), 538–543. https://doi.org/10.1016/j.nut.2013.09.014

Mishra, A., Ahmed, K., Froghi, S., & Dasgupta, P. (2015, December 1). Systematic review of the relationship between artificial sweetener consumption and cancer in humans: Analysis of 599,741 participants. *International Journal of Clinical Practice*, Vol. 69, pp. 1418–1426. https://doi.org/10.1111/ijcp.12703

Papandreou, D., Karabouta, Z., Pantoleon, A., & Rousso, I. (2012). Investigation of anthropometric, biochemical and dietary parameters of obese children with and without non-alcoholic fatty liver disease. *Appetite*, *59*(3), 939–944. https://doi.org/10.1016/j.appet.2012.09.006

Pereira, M.A. (2013). Diet beverages and the risk of obesity, diabetes, and cardiovascular disease: A review of the evidence. *Nutrition Reviews*, *71*(7), 433–440. https://doi.org/10.1111/nure.12038

Pharis, M.L., Colby, L., Wagner, A., & Mallya, G. (2018). Sales of healthy snacks and beverages following the implementation of healthy vending standards in City of Philadelphia vending machines. *Public Health Nutrition*, *21*(2), 339–345. https://doi.org/10.1017/S1368980017001914

Popkin, B.M., Armstrong, L.E., Bray, G.M., Caballero, B., Frei, B., & Willett, W.C. (2006, March 1). A new proposed guidance system for beverage consumption in the United States. *American Journal of Clinical Nutrition*, Vol. 83, pp. 529–542. https://doi.org/10.1093/ajcn.83.3.529

Poulos, N.S., & Pasch, K.E. (2015, November 1). Energy drink consumption is associated with unhealthy dietary behaviours among college youth. *Perspectives in Public Health*, Vol. 135, pp. 316–321. https://doi.org/10.1177/1757913914565388

Quester, P.G., & Smart, J. (1998). The influence of consumption situation and product involvement over consumers' use of product attribute. *Journal of Consumer Marketing*, *15*(3), 220–238. https://doi.org/10.1108/07363769810219107

Ramachandran, H.J., Wu, V.X., Kowitlawakul, Y., & Wang, W. (2016, May 1). Awareness, knowledge and healthy lifestyle behaviors related to coronary heart disease among women: An integrative review. *Heart and Lung: Journal of Acute and Critical Care*, Vol. 45, pp. 173–185. https://doi.org/10.1016/j.hrtlng.2016.02.004

Rehm, C.D., Peñalvo, J.L., Afshin, A., & Mozaffarian, D. (2016). Dietary intake among US Adults, 1999-2012. *JAMA – Journal of the American Medical Association*, *315*(23), 2542–2553. https://doi.org/10.1001/jama.2016.7491

Rivera, P., Tovar, R., Ramírez-López, M.T., Navarro, J.A., Vargas, A., Suárez, J., & Fonseca, F.R. de. (2020). Sex-Specific Anxiety and Prefrontal Cortex Glutamatergic Dysregulation Are Long-Term Consequences of Pre-and Postnatal Exposure to Hypercaloric Diet in a Rat Model. *Nutrients*, *12*(6). https://doi.org/10.3390/nu12061829

Samoggia, A., & Riedel, B. (2019). Consumers' Perceptions of Coffee Health Benefits and Motives for Coffee Consumption and Purchasing. *Nutrients*, *11*(3), 653. https://doi.org/10.3390/nu11030653

Siegrist, M., Shi, J., Giusto, A., & Hartmann, C. (2015). Worlds apart. Consumer acceptance of functional foods and beverages in Germany and China. *Appetite*, *92*, 87–93. https://doi.org/10.1016/j.appet.2015.05.017

Sikalidis, A.K. (2019, January 2). From Food for Survival to Food for Personalized Optimal Health: A Historical Perspective of How Food and Nutrition Gave Rise to Nutrigenomics. *Journal of the American College of Nutrition*, Vol. 38, pp. 84–95. https://doi.org/10.1080/07315724.2018.1481797

Sikalidis, A.K., Fitch, M.D., & Fleming, S.E. (2013). Risk of Colonic Cancer is Not Higher in the Obese Lepob Mouse Model Compared to Lean Littermates. *Pathology & Oncology Research*, *19*(4), 867–874. https://doi.org/10.1007/s12253-013-9656-7

Sikalidis, A.K., & Maykish, A. (2020). The Gut Microbiome and Type 2 Diabetes Mellitus: Discussing A Complex Relationship. *Biomedicines*, *8*(1), 8. https://doi.org/10.3390/biomedicines8010008

Sikalidis, A.K., Kelleher, A.H., Maykish, A., Kristo A.S. (2020) Non-alcoholic beverages, old and novel, and their potential effects on human health, with a focus on hydration and cardiometabolic health. *Medicina*. *56*(10):490. https://doi.org/10.3390/medicina56100490

Silva, A., Franco, M., Mady, C., Pallet, D., Tomlins, K., Bennett, B., … Sottomayor, M. (2016). Drivers of Acceptance of a New Beverage in Europe. *Beverages*, *2*(2), 12. https://doi.org/10.3390/beverages2020012

Sogari, G., Velez-Argumedo, C., Gómez, M.I., & Mora, C. (2018). College students and eating habits: A study using an ecological model for healthy behavior. *Nutrients*, *10*(12). https://doi.org/10.3390/nu10121823

Sonoma Winemakers Launch Non-Alc H2O Sonoma Soft Seltzer. 2020. Available from: https://www.bevnet.com/news/2020/sonoma-winemakers-launch-non-alc-h2o-sonom-soft-seltzer/.

Sparke, K., & Menrad, K. (2009). Cross-european and functional food-related consumer segmentation for new product development. *Journal of Food Products Marketing*, *15*(3), 213–230. https://doi.org/10.1080/10454440902908142

DOI: 10.7172/2449-6634.jmcbem.2020.2.3

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U.S. Geological Survey (USGS). (n.d.). Artesian water and artesian wells. Retrieved September 15, 2020, from https://www.usgs.gov/special-topic/water-science-school/science/artesian-water-and-artesian-wells?qt-science_center_objects=0#qt-science_center_objects.

van Birgelen, M., Semeijn, J., & Keicher, M. (2009). Packaging and Proenvironmental Consumption Behavior. *Environment and Behavior*, *41*(1), 125–146. https://doi.org/10.1177/0013916507311140

Vilela, S., Oliveira, A., Ramos, E., Moreira, P., Barros, H., & Lopes, C. (2014). Association between energy-dense food consumption at 2 years of age and diet quality at 4 years of age. *British Journal of Nutrition*, *111*(7), 1275–1282. https://doi.org/10.1017/S0007114513003620

Welsh, J.A., Sharma, A., Cunningham, S.A., & Vos, M.B. (2011). Consumption of added sugars and indicators of cardiovascular disease risk among US adolescents. *Circulation*, *123*(3), 249–257. https://doi.org/10.1161/CIRCULATIONAHA.110.972166

Wills, J.M., Storcksdieck Genannt Bonsmann, S., Kolka, M., & Grunert, K.G. (2012). Symposium 2: Nutrition and health claims: Help or hindrance: European consumers and health claims: Attitudes, understanding and purchasing behaviour. *Proceedings of the Nutrition Society*, *71*(2), 229–236. https://doi.org/10.1017/S0029665112000043

Yari, Z., Cheraghpour, M., Aghamohammadi, V., Alipour, M., Ghanei, N., & Hekmatdoost, A. (2020). Energy-dense nutrient-poor snacks and risk of non-alcoholic fattyliver disease: A case-control study in Iran. *BMC Research Notes*, *13*(1). https://doi.org/10.1186/s13104-020-05063-9

H2O Seltzer 0.0% – The World's 1st Wine-Infused Soft Seltzer – No Alcohol Soft Seltzer | The World's 1st Wine-Infused Sparkling Beverage with 0.0% Alcohol – Sonoma, CA, 95452. (n.d.). Retrieved September 15, 2020, from https://h2oseltzer.com/

DOI: 10.7172/2449-6634.jmcbem.2020.2.3

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8. SUPPLEMENTS

Figure S1
Graphical representation of an artesian well as per United States Geological Survey (USGS, 2020)

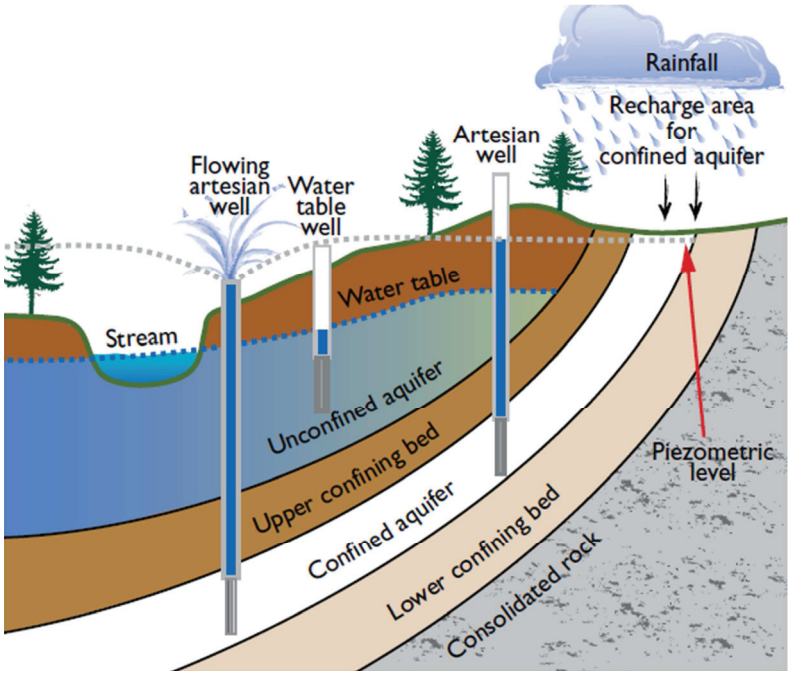

Figure S2
Graphical representation of the "H2O/H_2♡ Sonoma Soft Setzer" as launched (H2O, 2020)

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