

Research Article

IMPACTS OF LACK OF AWARENESS THAT IS RESTRICTING THE MICROGREEN MARKET OF NEPAL

Johan Van Rooyen, Prajip Shrestha, Adwiti Shrestha, Pragya Lama Tamang, Palden Phuntsok Nepali, Ojashwa Singh Lala

Department of Business and Technology, Webster University, Cha-am, Thailand

Received 19th November 2020; Accepted 24th December 2020; Published online 09th January 2021

ABSTRACT

Microgreens, despite being a new health trend in many other Asian countries, has failed to make an impression in Nepal. This study analyzes the impacts of lack of awareness that is restricting the marketability of microgreens in Nepal. The objective of this paper was to determine whether the marketability of microgreens is dependent on the awareness of microgreens. The research group consisted of a sample of 90 respondents, limited to citizens in Kathmandu Valley, Nepal. The research questions were structured around our problem; has the lack of awareness impacted the market of microgreens in Nepal. The questions in the survey were used for our findings with the use of a dichotomous choice approach and contingent valuation method. 89.7% of the respondents perceived that the awareness of microgreens does indeed influence the marketability of microgreens. Only half of the respondents on the survey were familiar with microgreens. The study has found that 88% of the respondents are interested in purchasing microgreens if they were sold at their location, after considering the health benefits. According to the research, we see a demand for healthier alternatives and consumers are willing to consume healthy food and pay more if it is beneficial to them. Therefore, with adequate awareness, there will be an increase in the popularity of microgreen and its market in Nepal.

Keywords: Microgreens, Awareness, Marketability, Kathmandu Valley, Dichotomous choice approach, Contingent valuation method.

INTRODUCTION

Microgreens are baby versions of many of the common greens and herbs we grow in the garden. Despite its smaller size, they are packed with nutrients, containing higher nutrient levels than the mature vegetables (Peter; 2018). Microgreens are said to be from 40% to 200% more nutritious than the vegetables we are used to consuming (Peter; 2018). Depending on the variety grown, microgreens are usually ready to consume in about a week to three weeks (Peter; 2018). They have an intense aromatic flavor and concentrated nutrient content and come in a variety of colored greens that are much smaller in size and can be sold before being harvested, unlike baby greens. For instance, it can be bought whole and cut at home, keeping them alive until they are consumed. As microgreens are very convenient to grow, it could be easily grown in a variety of locations, like outdoors, in greenhouses and even on your windowsill (Peter; 2018). Microgreen is an emerging market around the world due to its benefits but many in Nepal aren't aware about them.

Microgreen family:

1. Amaranthaceae family:
 - Includes amaranth, beets, chard, quinoa, and spinach.
2. Amaryllidaceae family:
 - Includes chives, garlic, leeks, and onions.
3. Apiaceae family:
 - Includes carrot, celery, dill, and fennel.
4. Asteraceae family:
 - Includes chicory, endive, lettuce, and radicchio.
5. Brassicaceae family:
 - Includes arugula, broccoli, cabbage, cauliflower, radish, and watercress.
6. Cucurbitaceae family:
 - Includes cucumbers, melons, and squashes.

7. Lamiaceae family:

- Includes most common herbs like mint, basil, rosemary, sage, and oregano.

8. Poaceae family:

- Includes grasses and cereals like barley, corn, rice, oats, and wheatgrass. As well as legumes including beans, chickpeas, and lentils.

Awareness

Awareness is the state of being aware and to be aware is to have knowledge and understanding that something exists or is happening (Merriam-Webster's Collegiate Dictionary, 1999). A product sale and marketability capabilities are directly linked to the product's awareness. Consumers are more likely to trust and purchase things they already know and are usually only willing to try new things if it is actually good for them. Likewise, they are likely to not purchase goods they have no knowledge about. Therefore, if a product is unknown to the certain market it is not possible for it to succeed in the market. The purpose of this research paper was to analyze the effects of lack of awareness and market of microgreen in Nepal. According to the literature review findings, it was found out that people in Nepal are willing to pay extra if this meant buying organic and healthy greens. This research is based on the question, "What are the impacts of the lack of awareness that is restricting the microgreen market of Nepal". The hypothesis of this research paper is that, "With adequate awareness, there will be an increase in the popularity of the microgreen market and its sales in Nepal".

Literature Review

Kumar Bhattarai (2019) analyzed the consumer's willingness to pay for organic food in the Kathmandu valley. In order to determine the extent of willingness of the consumers, data were collected of 120 respondents within the Kathmandu valley. The research applied a single bounded dichotomous choice approach with contingent valuation method while conducting the survey. According to the survey, 96% of the respondents were interested in purchasing

organic vegetables, while 86% of the respondents were willing to pay additional money to consume organic vegetables (Bhattarai, 2019). Majority of the respondents believe that organic vegetables are not only a healthier option, but they are tastier than the regular vegetables. Majority of the respondents were aware of the downsides of consuming conventional vegetables and preferred organic vegetables. The researcher concludes that the reason behind the high demand for organic vegetables by the population in Kathmandu valley is due to health concerns associated with the overuse of pesticides and other harmful chemicals on the vegetables. The research provides a solution mentioning that government interference in supporting the production of organic vegetables would further motivate farmers in Kathmandu Valley. Furthermore, If organic vegetables are produced in a more organized way and on a large scale, the average cost of production may fall so that the market will be further enhanced (Bhattarai, 2019). Thus, the research showed that consumers are willing to pay an extra fee in order to consume healthier greens.

According to a research done by Davis and Khazanchi (2008), the main idea about this subject is there is a direct correlation between the sales volume of a product and the amount of reviews a product receives from customers (i.e. the more people know about a product, the amount of sales will increase). The research paper looks into "Word of Mouth" (WOM) as a predictor for product sales in e-commerce. The existence of online WOM results in an increase in awareness and a positive or negative attitude towards a product resulting in a change in sales (Alvarez et al. 2007, as cited in Davis & Khazanchi, 2004). Many studies have also shown that the WOM volume significantly correlates with consumer behavior and market outcome (Amblee and Bui, 2007, Anderson and Salisbury, 2003, Bowman and Narayandas 2001, Liu 2006, as cited in Davis & Khazanchi, 2004). According to the research done by Fang and Salvendy (2003) concludes that 'pictures of products are necessary to provide customers visual cues and richer information' (Davis & Khazanchi, 2004). The research also shows that the influence of WOM can be so strong that it overrides private signals and results in individuals relying solely on the information provided by 'reviewers' (Banerjee 1992, Ellison and Funderberg 1995, as cited in Davis & Khazanchi, 2004). Smith et al. (2005) in particular suggest that peer reviews are the most preferred by consumers (Smith et al. 2005, as cited in Davis & Khazanchi, 2004). They found that even when the peer is described as being low in rapport and expertise, peer recommendations are still used more than editorial recommendations (Smith et al. 2005, as cited in Davis & Khazanchi, 2004). In conclusion the results from the research suggest that product pages with higher number of customer views will produce a higher number or purchase (Davis & Khazanchi, 2004). This conclusion makes intuitive sense in that the more the number of customers viewing a product page the more popular that product may be and therefore the more likely sales of that product will increase (Davis & Khazanchi, 2004). According to the research, the recent advances in plant science, nutrition and health benefits from different varieties of microgreens are not yet completely addressed or fully looked upon. The research paper dives into an intensive look on microgreens scientifically and the experimental challenges while conducting research on its health benefits. They focus on the species that are not yet or inadequately investigated, such as wild plants, and fruit tree strains (Galièni, Falcinelli, Stagnari, Datti & Benincasa, 2020). For instance, the opportunity to generate natural product libraries for drug discovery along with sanitization and processing technologies to obtain high-quality products (Galièni, Falcinelli, Stagnari, Datti & Benincasa, 2020). In conclusion, sprouts and microgreens have been extensively studied in recent years, however several aspects remain under-investigated or unexplored.

According to Hanna Bornmark, Åsa Göransson and Christina Svensson, 2005, The purpose of their dissertation was to research about brand awareness and to study to what extent does brand awareness matters when purchasing for the first time in an unfamiliar culture. (Bornmark, Göransson and Svensson, 2005) The concept of brand equity came about in the 1900, brand equity is to understand brand management and consumer behavior. (Bornmark, Göransson and Svensson, 2005) It consists of emotions attached with the brand such as, loyalty, memories, feelings and association. (Uggla, 2001; Söderlund, 2001; Melin, 1999, cited by Bornmark, Göransson and Svensson, 2005). Brand equity helps build the knowledge of the brand and this consumer knowledge consists of brand awareness and brand image. (Bornmark, Göransson and Svensson, 2005) Brand image helps associate the brand in the consumer's mind and Brand Awareness describes people's perception and reaction to an event. (Bornmark, Göransson and Svensson, 2005, cited by Bornmark, Göransson and Svensson, 2005). Awareness can be categorized into two parts, recognition – to recognize the brand, and recall- to be able to recall the brand from memory. (Bornmark, Göransson and Svensson, 2005) Brand awareness can be created by increasing the familiarity through exposure and association. It is important to build brand awareness so that the consumers recognize and recall the brand. Brand awareness affects the consumer choice and their choice of brand. Brand awareness is important to sell any product, but the quality of the brand is just as important if the product is new. (Aaker, 1991, cited by Bornmark, Göransson and Svensson, 2005) In conclusion, brand awareness is the major factor influencing consumer buying behavior and choice of the brand. (Bornmark, Göransson and Svensson, 2005) It is also a very important factor when purchasing for the first time in a new environment.

As most of the countries in Asia are agriculturally based it is no surprise that most of the vegetables found in supermarkets can be traced back to Asia. The paper goes in depth about three specific types of green edibles, which are sprouts, microgreens and edible flowers. The paper goes into detail explaining each of them and their benefits while also talking about how best to care for them. While it is a given that there are many countries that are still based on agriculture in Asia, it would be a great idea to be able to introduce a type of crop that would be much more nutritious and healthier, i.e. microgreens. Moreover, usually countries that are still based on agriculture tend to be worse off than others as the majority of the population is usually poor. But introducing an alternative and healthier plant could help the people to firstly live healthier lives and secondly be able to capitalize on this new type of crop that could be sold worldwide for much more. 'Roadmap to a Resource Efficient Europe' by 2050 (European Commission 2011) is a great example of how such initiatives can be taken to help alleviate such sectors. Microgreens can also be grown at home; therefore, it can be picked up by the population, who can later start producing enough for their own families and even make additional income from it. Moreover, with the internet now available to a great number of people it is possible to more easily find guides and handbooks on how to best raise, cultivate and eat microgreens. (Franks and Richardson 2009; Hill 2011). It is also to be noted that lately, around the world there has come about a sort of social awakening where people are looking for healthier alternatives when it comes to food. A common trend among these people is to go green so as to say. As science advances and people are more cautious about what they put in their bodies it is fair to say that most people are willing to go the extra mile for an even healthier alternative. While the above-mentioned point talks about most vegetarians in general, it is important to know that there are people who avoid certain food for other reasons as well. Vegans are people that abstain from any animal-based produce. They even go so far as to avoid things like silk, wool and leather at times aside from milk and

eggs which are more commonly known. It is also to be noted that in western countries most vegans have opted for microgreens as a health alternative as it provides them with the many essential and required number of minerals and vitamins. Microgreens have also slowly found its place in the restaurant industry, where chefs seek to capitalize on the fresh flavor accent and the more nutritious aspects of the plant. Therefore, it is safe to say that microgreens have already been able to find their way to become a new dining trend. Such companies usually pick and choose the right plants for the right dishes. These are usually a trade secret and often patented. Moreover, many lines of such plants are already sourced in Asia. After going through the paper, it is easy to see why the author feels that microgreens could have a strong impact in Asia. Moreover, given the socio-economic state of Nepal it could be much stronger. While Nepal is an agriculturally based country, it is also home to people of many cultures and religions, some of which are vegetarians as well. As the demand for healthier food keeps growing in the country it can also be remembered that Nepal also attracts a lot of tourists. Usually, these tourists are often hippies who are vegan. While veganism has also slowly started to catch on with the local population, even now it could do great in the restaurant industry which line up the many streets in the commercial hubs of the country.

METHODOLOGY

Theoretical framework of contingent valuation method

This study was conducted using contingent valuation method (CVM). CVM is a direct face-to-face questioning, where respondents are directly asked a set of questions regarding the impacts of the lack of awareness that restricts the marketability of Microgreens in Nepal to overver consumer perception from a good or service in a hypothetical market situation (Nandi et al, 2016). This study was conducted using both open ended question approach and dichotomous choice approach. In the dichotomous choice approach, we used a 'yes' or 'no' response question that is correlated with one another to understand the markets perception and knowledge about microgreens.

Explanatory variables

In order to understand the public perception of 'Microgreens' in Nepal, the relationship between explanatory variables such as age, education level, preferable price, preferred vegetable, occupation, familiarity to microgreens as well as their willingness to purchase microgreens if sold at their location.

Survey and questionnaire design

Data was collected through structured questionnaires. A survey was conducted in this research to collect the necessary data. The survey consisted of a set of questionnaires developed in order to gain an insight on the familiarity and knowledge of microgreens to our target group, and their willingness to purchase microgreens if sold in Kathmandu Valley. The questionnaires were created under the suggestions of Mitchell and Carson (1989) and Arrow (1993). The survey also focuses on the research question that addresses the impacts of the lack of marketing of microgreens that is restricting the microgreens market of Nepal. Moreover, the survey consisted of six sections. The first section includes questions related to identification of the respondent as well as the socio-economic information of the respondent. The second section includes the respondent's familiarity of the product, i.e microgreens. The third section includes the consumption of organic vegetables and the respondent's preference. The fourth section includes the respondent's willingness to purchase the product after knowing the benefits. The fifth section includes the

respondents view on whether the marketability of microgreens depend on the marketing and advertising. The sixth section includes the increase in popularity of microgreens with adequate awareness and marketing.

Data collection

Primary source of information was mainly used in the study. In this study, data was collected from 90 respondents. All the respondents were selected within the Kathmandu Valley. The survey was conducted online, and data were collected from November 15, 2020 to November 29, 2020 for the survey. Use of secondary sources were also used as per the requirements of the study. While collecting the data, we provided a hypothetical market to the respondent in order to get their perception and knowledge. The socio-economic and demographical features of the respondents were taken into account with the use of descriptive statistics. Figures consisting of the results of the survey were also presented for the purpose of the study.

FINDINGS

Socio-economic and Demographic Characteristics of respondents

Among the 90 respondents, 16 were below the age of 20 which comprised 27% of the total sample. 48% of the respondents were aged between 21-30, with 12% falling under the range of 31-40. There were only 2% of respondents from the age range of 41-50, while there were 7% and 3% for the ages 51-60 and greater than 60 years respectively. According to the results of the survey, Figure 1. shows that the majority of the respondents were 20-30 years old.

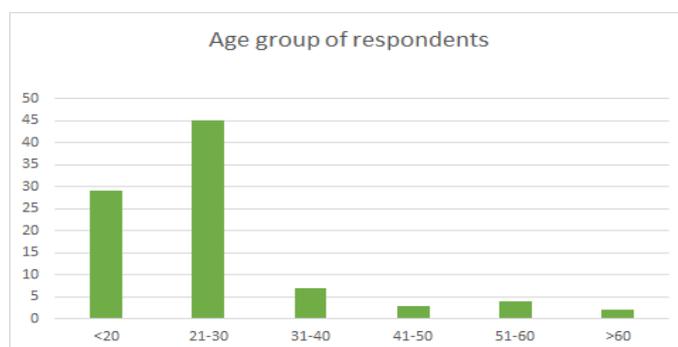


Figure 1.

From figure 2, we discovered that the majority of the respondents were students, covering 48.8% of the total response. In the remaining population, accountants contributed 4.4%, businessmen contributed 7.7%, bankers contributed 5%, unemployed people contributed 14%, digital marketers contributed 4%, grant managers contributed 5.5%, managing directors contributed 7.7% and chefs contributed 1.1% of the total population.

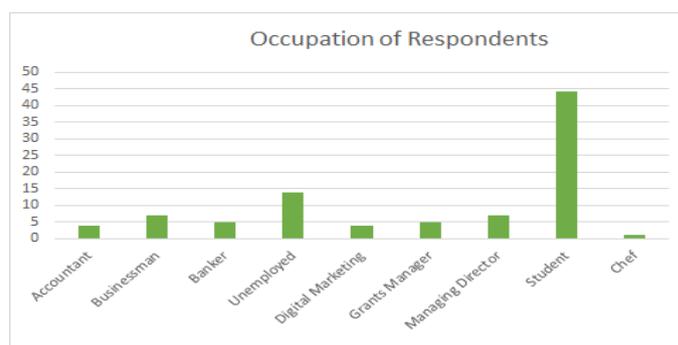


Figure 2.

Consumers' perception on microgreens

The survey also questioned the respondents about their preferred vegetables. This was taken under account to gain knowledge regarding the specific microgreen market that would be beneficial in Nepal. From figure 3 we can see that, majority of the respondents preferred spinach. The second most preferred vegetable was cabbage and the peas were the third most preferred vegetable in the survey. Only 13 respondents preferred coriander whereas only 9 respondents preferred bean sprouts. The number of respondents that preferred turnip, radish, sunflower and lady fingers were low.

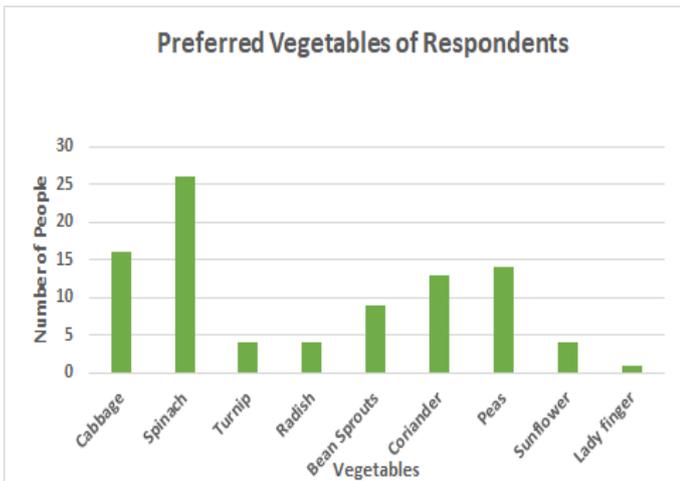


Figure 3.

Consumers' familiarity with microgreens

The survey results showed that the microgreen market is comparatively new in Nepal as 50% of the respondents were not familiar with microgreens. From figure 4, we can observe that more than half of the respondents were not aware about microgreens. With the overuse of chemicals and pesticides on normal vegetables, the consumers are shifting towards organically safer options however, the majority of the consumers are yet to be introduced to microgreens.

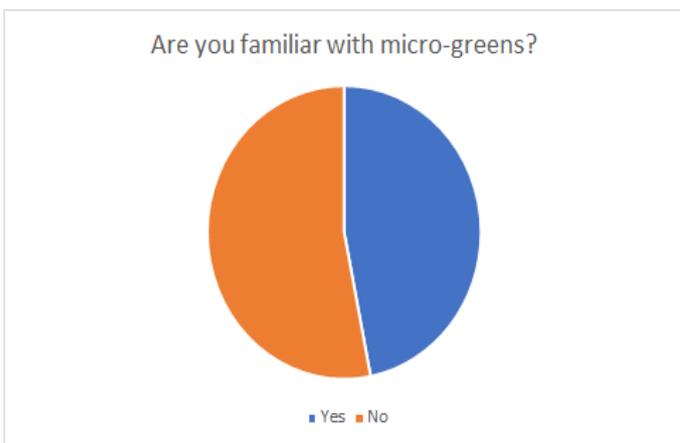


Figure 4.

Consumers' Perception on Lack of Awareness and Intent to purchase Microgreens

According to the survey, although half of the respondents were not familiar with microgreens, the majority of the respondents were interested or willing to purchase microgreens. From figure 5 we can observe that 87% of the respondents were interested in purchasing microgreens after knowing about microgreens and its benefits.

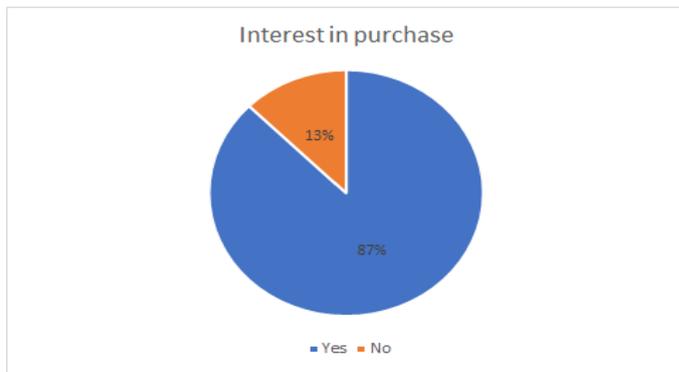


Figure 5.

In the survey the respondents were asked whether the popularity of microgreens will increase if there is adequate awareness and marketing, the majority of respondents agreed to the fact that the products require more awareness and marketing in order to grow in the market.

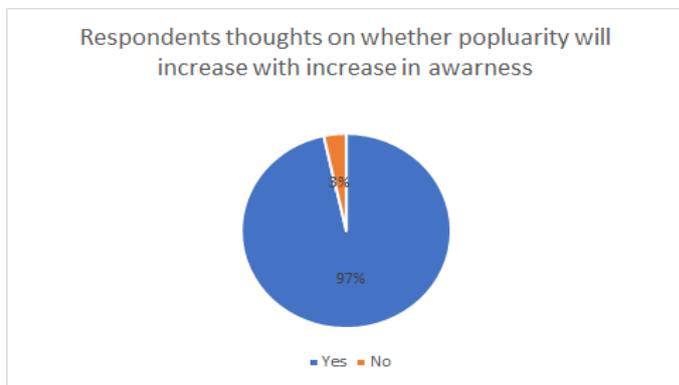


Figure 6.

Causes of lack of awareness

With the impact of microgreen culture as a new option in the food industry in Nepal, there are fewer groups of people who are aware of microgreens whereas, according to the survey, there are still people who do not acknowledge microgreens and the health benefits provided accordingly. With the lack of awareness in concern to the individuals about microgreens, even if we extend our reach to the people other than our niche market, they are still not convinced about the benefits of microgreens. The causes of lack of awareness are based upon the fact related to people following the same culture and trend who are not open to trying new things and who are okay not staying up to the trend.

Comparison to other countries

In India, the neighboring country of Nepal there is comparatively more awareness of microgreens than the recent years. Hydroponics farms have become a new trend in the Agricultural sector, especially with the growing needs of food and also because of the limited resources (Suresh, Nirmal & Roy, 2020). Hydroponic cultures were practiced in India, mostly in the hotel industry as this method provided both nutritious as well as tastier vegetables. Limited use of resources, pesticide free growing, utmost utilization of space, faster production are few factors making the method a booming business (Suresh, Nirmal & Roy, 2020). Thus, these reasons enhance the microgreen market in India. Commercial ventures are smoothly operating and selling microgreens on online platforms due to high demand of microgreens by the health-conscious population. There is a higher demand for microgreens, especially in the metropolitan cities (Hallet, 2016).

Present microgreen market

In contrast to the absence of familiarity of microgreens to half of the respondents of the survey, there is a microgreen market in Nepal. However, due to the lack of marketing and advertising of microgreens and large availability of conventional vegetables, the microgreen market in Nepal is unheard of. Research found that half of the respondents were unaware of microgreens and after considering the health benefits of consuming microgreens, the majority were willing to purchase microgreens if they were sold in the Kathmandu Valley. For instance, due to the lack of marketing of microgreens, they have been undervalued in Nepal.

Social media, advertising and marketing in present: The microgreens market of Nepal is not untouched however, the product is new to the consumers as microgreens have been under-marketed in Nepal. There are a few online microgreen businesses operating in Nepal, but the websites are inactive as a result of lack of customers interested in Microgreens. Advertising on a larger scale might be necessary in order to raise awareness of microgreens to the consumers in Kathmandu Valley. Instead of restricting to an online, social media advertising, businesses could focus on traditional advertising to reach the older potential consumers. Government inference in motivating the production of organic vegetables and microgreens would also motivate a larger scale production of microgreens.

Conclusion

The study found out that 97% of the respondents perceive that the microgreen market is unheard of due to the lack of awareness, and that the microgreens market would flourish with proper marketing and awareness of the product. Vast majority of the respondents were willing to purchase microgreens knowing that they are the healthier alternative to conventional vegetables. In such a situation, the priority must be given towards advertising of microgreens to the general public. Microgreen ventures could opt for both digital and traditional advertising approaches while promoting microgreens to the potential consumers. Government intervention to support the production of microgreens for an organic and healthier option would also encourage businesses as well as consumers to produce and purchase microgreens respectively. Thus, with adequate awareness the microgreen market will be an increase in the popularity and sales of microgreens Nepal.

Existing vendors selling microgreens in Nepal

Through extensive web surfing we were able to find and contact a few microgreens vendors in Nepal. However, they were plagued by the issue of lack of awareness hampering their reach and customer engagement. Even when we reached out to one of the vendors that had opted to do their business through Facebook, they noted that the sheer fact of people not knowing what it was, was usually the main reason they lacked engagement. Also reviewing other microgreen pages on Facebook, there was a clear lack of engagement with people on all of them. Raising awareness through aggressive marketing could turn the issue around in Nepal. However, this paper aims to open dialogue and to create new paths for research on microgreens, specifically in the Nepali market.

Areas for Future Research

Although there has been a positive response by the respondents in the survey, since the microgreen market has not been successful in Nepal, there were limitations in fully understanding the future

prospect of the microgreen market in Nepal. Future research could be conducted over the years to view the growth in the popularity of the microgreen market. Re-evaluation of the issue with different frameworks and models could be carried out. Future research could also consider focusing on other locations outside of Kathmandu Valley.

REFERENCES

- Aaker, D. A. (1991). *Managing brand equity: Capitalizing on the value of a brand name*. New York: The Free Press. <https://scihub.wikicn.top/https://doi.org/10.1177%2F002224299205600211>
- Alvarez, L. S., Martin, A. M. D., & Casielles, R. V. (2007) Relationship marketing and information and communication technologies: Analysis of retail travel agencies. *Journal of Travel Research*, 45(4), 453-463.
- Amblee, N., & Bui, T. (2007). Freeware downloads: An empirical investigation into the impact of expert and user reviews on demand for digital goods. *Americas Conference on Information Systems*.
- Anderson, E. W. (1998). Customer satisfaction and word of mouth. *Journal of Service Research*, 1(5), 5-17.
- Banerjee, A. V. (1992) A simple model of herd behavior. *Quarterly Journal of Economics*, 107(3), 797-817.
- Bhattarai, K. (2019). Consumer's willingness to pay for organic vegetables: Empirical evidence from Nepal. *Economics and Sociology*, 12(3), 132-146.
- Bornmark, H., Göransson, A., & Svensson C. (2005). A study to indicate the importance of brand awareness in brand choice - A cultural perspective.
- Bowman, D., & Narayandas, D. (2001) Managing customerinitiated contacts with manufacturers: The impact on share of category requirements and word-of-mouth behavior. *Journal of Marketing Research*, 38(3), 281-97.
- Davis, A. & Khazanchi, D. (2008). An empirical study of online word of mouth as a predictor for multi-product category e-commerce sales. *Electronic Markets*, 18(2), 130-141. [scihub.do/10.1080/10196780802044776](https://scihub.wikicn.top/10.1080/10196780802044776)
- Ebert, A. W. (2013). Sprouts, microgreens, and edible flowers: The potential for high value specialty produce in Asia. 216-227.
- European Commission (2011). Roadmap to a resource efficient Europe. 25. http://ec.europa.eu/environment/resource_efficiency/pdf/com2011_571.pdf
- Fang, X. and Salvendy, G. (2003) Customer-centered rules for design of e-commerce web sites. *Communications of the ACM*, 46(12), 332-36.
- Franks E., & Richardson J. (2009). *Microgreens: A guide to growing nutrient-packed greens*. GibbsSmith, Layton, Utah.
- Galièni, A., Falcinelli, B., Stagnari, F., Datti, A., & Benincasa, P. (2020) Sprouts and microgreens: Trends, opportunities and horizons for novel research. *Agronomy*, 10(9), 1-45. <https://scihub.wikicn.top/10.3390/agronomy10091424>
- Hallett, S. (2016). Urban agriculture as a resiliency strategy. *Sowing Seeds in the City*, 23-38. https://scihub.wikicn.top/10.1007/978-94-017-7456-7_3
- Liu, Y. (2006). Word of mouth for movies: Its dynamics and impact on box office revenue. *Journal of Marketing*, 70, 74-89.
- Nandi, R., Bokelmann, W., Gowdru, N. V., & Dias, G. (2016). Factors influencing consumers' willingness to pay for organic fruits and vegetables: Empirical evidence from a consumer survey in India. *Journal of Food Products Marketing*, 23(4), 430-451. <https://scihub.wikicn.top/10.1080/10454446.2015.1048018>
- Smith, D., Menon, S., & Sivakumar, K. (2005). Online peer and editorial recommendations, trust, and choice in virtual markets. *Journal of Interactive Marketing*, 19(3), 15-37.
- Söderlund, M. (2001). *Den lojalakunden*. Malmö: Liber Ekonomi.
- Uggla, H. (2001). *Organisation av varumärke*. Malmö: Liber Ekonomi