JBF EM Journal of Business and Finance in Emerging Markets

LEADERSHIP, CONTRIBUTION, LANGUAGE AND SHARED CONTENT AS METRICS IN MALAYSIAN MILLENNIALS' DECISION MAKING

Yeo Chu May Amy, Tunku Abdul Rahman University College, Malaysia
Steve Carter, Heriot-Watt University, United Kingdom
Khor Zhan Shuo, Tunku Abdul Rahman University College, Malaysia

ABSTRACT

Millennials have purchasing power second only to 'baby boomers'. This generation grew up in a time of immense and fast-paced technological change. The study aims to investigate how this particular group of consumers made the decision based on their influencers, share content and common language in a virtually connected environment. A positivist paradigm to amass data from different business undergraduates who are familiar with the various social media and online purchases were used. Descriptive analyses of variances; multiple regressions were employed. Results revealed positive correlations between the constructs in and also indicated that 'factors in communicating', 'Influencers recommendations', 'opinion leaders advice', and 'agreements with reference partner' were statistically significant, making a unique contribution of prediction to the decision-making process. The limitations apply to a country-specific context, small sample size and a specific type of respondent. Studies in other contexts and with different respondents may yield different results. Whilst the study has confirmed and reinforced the importance of social media as a potent force in communication to and within Millennial groups, the study has highlighted that 'collective intelligence' in the purchase decision-making process has emerged as a result of the coalescing of social media with other complex individual factors like methods of advice and agreement with opinion leaders.

Keywords: Malaysia, opinion leader, influencers, decision making, social media

Introduction

Having its roots in social networking, much has been made recently in Marketing, about the power of Collective Intelligence (CI) and Collaboration ('swarms') in predicting sales of commodities, goods, and services (Elshendy et al. 2017). The process of collaboration starts with a person ('the queen bee') with an idea. The 'queen' then attracts a group of like-minded people, who in turn, then gather round them a more substantial group (a 'swarm') who, pooling their collective energy, work in this Collective Intelligence Network (COIN), to bring an idea to fruition, for example Steve Jobs at Apple. According to Gloor (2017)(a) to make the 'swarm' work effectively, there are six 'honest signals' of collaboration/communication-strong leadership, bilateral contribution, rotating leadership, rapid responsiveness, honest sentiment, and shared context. The concept of collaborative networks, using open social media as the source of data, has been put to good use, for example, aiding the prediction of brand sales (Gloor 2017)(b). However, the concept has not been tested in an emerging country context and with such a dynamic group as 'Millennials', often characterised as 'butterflies', with a low boredom threshold and with a 'I want it now' philosophy This research addresses this question, looking at the consumer purchasing process with a group of typical millennials in Malaysia.

The study addressed the following research questions:
1 What is the role of 'leadership/ influencer' in the purchase process?
2 What is the role of 'balanced contribution' in the purchase process?
3 What is the role of 'honest sentiment' (language) in the purchase process?
4 What is the role of 'shared context' in the purchase process?

Conceptual Underpinnings

Opinion leader, balanced contribution and buyer purchase decision

Cho, Hwang, and Lee (2012) have investigated which opinion leader was the best marketing choice in terms of diffusion speed and the maximum cumulative number of adopters, using a social network approach and threshold model. Dong et al. (2018) on the other hand, also examined the use of opinion dynamics in several situations, one of which was to use recommender systems to help users select the right products or services in information overload environments (Castrol et al., 2017). According to Vernette (2004), advertisers choose opinion leaders as a specific media target and they potentially spread their messages through word-of-mouth to affect other users' behavior (Chen et al., 2015)

H1: Baring any circumstances, a purchaser's perceived buying decision depends on the expertise of an opinion leader. Besides, a positive relationship is found in their relationship.

H2: (i) Given a collective intelligence environment, opinion leaders do correlate with the balanced contribution between different potential buyers, thereby (ii) also contribute to the prediction of consumer decision making.

H3: Leaders' views are positively correlated to buyers' decision to purchase products and also form part of the predictors to the consumer decision-making process.

The honest sentiment shared context (Language –negative/positive) and purchase intent

Consumers are now able to gather information through various media channels at each stage of the purchase decision-making process (need recognition, information search, alternative evaluation, purchase decision, and post-purchase behavior). Accordingly, companies must determine the appropriate media channels through which to promote their products to reach target consumers. According to Brönnimann (2013), sentiment analysis is an important tool in the study of social media that requires multi-language text analysis. He found that a novel field

of application was the analysis of communication in social media by politicians in a country with multiple national languages. An interesting result was to develop a sentiment algorithm (sad, happy, angry, etc.) that employs emotions as a universally comprehensible clue on whether a given text is positive or negative, and this can be used to determine the sentiment of messages on Twitter in different languages.

Various researchers have also analyzed the huge amount of data, focused on analyzing the content of the tweets with additional metadata such as time or the geolocation of the tweets. Sentiment analysis or opinion mining also tries to find emotion hidden behind the text (Bollen, Mao, and Zeng, 2011; Chung and Liu, 2011; Rittermann, Osbome, and Klein, 2009; Saif, He and Alani, 2012; and Feldman, 2013) are just some examples of researchers who wrote either positively or negatively about whether the subject of the tweet, and the results of which, could be applied for promotion and marketing purposes as well as managing reputations or analyzing popularity. Ignatow et al. (2016) used sentiment analysis of public opinion as expressed in social media by comparing reactions to the Trayvon Martin controversy in spring 2012 by commenters on the partisan news websites the *Huffington Post* and *Daily Caller* and the results predicted that high-profile commentators would be more polarizing than other news personalities and topics. Other researchers, for example, Freeman (1979), advanced the concept of "structural centrality" in social networks in terms of consistency with intuitions and their interpretability of language, which could be applied to perceived leadership in influencing group processes.

H4: ***View sharing*** *has a positive relationship with the buyer's decision making in addition to its predictive impact.*
H5: ***Language*** *used has a positive relationship with the buyer's purchase stage*
H6: ***Place of purchase*** *(offline and online) has a positive relationship with the buyer's purchase stage*
H7: Consumer ***form of communication*** *contributes to the predictive buyer's purchase stage*

Research Methods

Research Design and sampling

The authors employed a positivist, cross-sectional paradigm carried out on a convenience sample of business undergraduates from a business faculty of a Malaysian higher educational institution (HEI). The business faculty is one of the largest faculties in this higher institution, with a population of around 5,000 students. About 95% of the total students are from the Chinese ancestry with a minority of Indian and Malay ethnicity. Convenience sampling was used as it is a type of non-random sampling where members of the target population that meet certain practical criteria, such as easy accessibility, geographical proximity, availability at a given time, or the willingness to participate are included for the study (Dörnyei, 2007).To test the formulated hypotheses and answer the research questions, several statistical measurements were employed namely descriptive statistics, Pearson product-moment correlation, sample t-test, ANOVA analysis, reliabilities and finally, standard multiple regressions were used to determine the predictive nature of how young consumers make decision intelligently based on a myriad of collective information and communication.

Instrument and measurement of variables

A self-administered survey allows respondents to complete a survey instrument on their own, which has the benefits of eliminating interviewer bias, the ability to reach large research populations, and attain an acceptable response rate (Denscombe, 2010; Burns and Bush, 2012; Haydamand Mostert, 2013). The questionnaire and the construct items were developed using

a combination of sources. The first part of the questionnaire consisted of the demographic physiognomies that included age, gender, and various business programs. The second part focused on the different types of social media used opinion leaders (influencers), factors of communication, recommendations by leaders and share views on social media.(citations) The last part mainly covered the decision making stages of purchasers. These variables were obtained from multiple sources including the purchase cycle journal articles on the criteria/attributes for purchasing products, previous work on the subject (e.g. Carter and Yeo, 2018) and the components of CI (Center for Collective Intelligence, MIT, USA)

A pre-test is used to survey a small subset of the population to determine whether the research instrument and method to collect data are relevant, reliable and valid (Bhattacherjee, 2012). The questionnaire was pre-tested among 30 final year business respondents who were our pilot test surrogates to check the reliability of the scales, wording and question order, and the ability of respondents to understand the meaning of the questions. Some of the questions were reworded, and a couple of the Likert scale statements were tweaked. A total of 264 useable questionnaires were collected over three months before and after the semester that lasted 14 weeks per term. Minor changes were made following the pre-test including design changes, spacing, and spelling. In this study, we used students whom we have taught and also teaching during the period of data collection. This was also to ensure we were able to gather data more accurately and also secure a more satisfactory response rate.

Questionnaire items were then keyed into Google Form created for data collection, collation and analyses of the study. Before disseminating and forwarding the link to all targeted respondents via emailing, Whatsapps and/or Facebook, conducted a sample test online to ensure technical soundness and zero error, followed by approval granted by the institution's Ethics Committee. To facilitate the completion of questionnaires, we used hard copies and online administration via Google Form to reach the respondents. Some of which were administered immediately after the classes ended. However, we assured respondents that the questionnaire took no longer than ten minutes to complete, and the face-to-face administration once again ensured a high-survey participation rate in spite of no incentive being offered. The total sample size was then determined, having considered the homogeneity of the population. The collected data were then transferred from Google Form to SPSS version 22 after variables naming and keying-in for further analyses.

Reliability Value of Collective intelligence constructs

A computed alpha coefficient can vary between 1 and 0. The figure 0.80 is typically employed as a rule of thumb to denote an acceptable level of internal reliability though many other writers accept a slightly lower figure (Bryman and Bell, 2007; DeVellis, 2012). In this study, all measurable constructs were well above the Cronbach alpha coefficient of 0.7 indicating the scale's internal consistency reliability. There was also no negative value reported in the inter-item correlation matrix.

Results And Discussion

Frequency and duration of social media use

Positive kurtosis means the distribution is rather peaked (cluster in the center) with a long thin tail. Kurtosis can result in an underestimate of the variance, but this risk is also reduced with a large sample (i.e. 200 plus cases) (Tabachnick and Fidell 2013, p.80). In this study, since some of the social media such as Facebook, Youtube, Whatsapp, Wechat, and Instagram had a value of 0, it showed that the data for this media were perfectly normal compared to other type of social media. It also clearly denoted that Malaysian young consumers were more in favor of

using this media to communicate with people whom they dealt with and interacted with day today. Further analysis of the mean score also revealed that higher average for the same type of social media users in terms of per day and duration used each time.

Prior studies (e.g.: Trigo and Coelho, 2011; Heylighen, 1999) have also shown how every single item (such as opinion leader's views, influences, shared context, sentiments) that make up the nuances of collective intelligence do affect and support the decision-making of an individual. In this context, the individual consumer does matter concerning such collective elements. The extant research appears to be in line with that of Bonabeau (2009) and Trigo and Coelho (2011), who contended that the collective intelligence is the paradigm that allows actors or influencers to solve specific problems and it emerges from the collaboration of individuals.

One-Way analysis on age group

ANOVA (one-way analysis) was performed in comparing the mean scores of more than two groups (eg: age group). Given in Table (1), Levene's test for homogeneity of variances shows that all the numbers are greater than 0.05, indicating that the study has not violated the assumption of homogeneity of variance (Pallant, 2013). This study also revealed that only four composite constructs, namely 'share view', 'purchase places', forms of communication' and opinion leader's recommendation, were statistically significant at $p<0.05$ concerning age group. For example, *share view* ($p<0.025$, $F(3, 260) = 2.941$); *purchase places* ($p<0.001$, $F(3, 260) = 5.559$); *forms of communication* ($p<0.042$, $F(3, 260) = 2.768$) and *opinion leader recommendation* ($p<0.026$, $F(3, 260) = 3.128$) were significantly different in relation to age group. Hence, support partially H7 in which age moderates the relationship between elements of CI and decision-making.

In terms of decision-making, different age groups exhibited different behavior to people whom they communicated with before purchasing any product, particularly shoes, clothes and bags. This group of people can be their friends, peers, family members, and classmates. Similarly, they also exert different proclivity to purchase products on different platforms, which includes online, offline (e.g., small specialist shop, shopping mall) and a combination of the two methods. The form of communication (e.g.: Facebook, Messager, Whatsapp and Twitter) that respondents with different ages would be most likely to use with another party differs. Interestingly, the results also revealed that different age groups sought recommendations or advice 'differently' from their friends, peers and family members before purchasing their clothes and shoes. Additionally, Salem (2018) has found age does differ in terms of buying perfume in the decision-making process. This result is also in line with that of Song, Yi and Huang (2017) who added an extra dimension; that of the deal scarcity of the item being purchased. Results from a laboratory experiment on online shopping indicated that 'when the degree of deal scarcity is low, recommendations from weak social ties are more persuasive than those from strong social ties for consumers at the initial shopping stage, whereas the opposite occurs for consumers at the later shopping stage. At both shopping stages, the differences in the effects of social recommendations disappear when the deals are highly scarce'.

Regression Analysis for the composite CI constructs

To measure the predictive power of the constructs, we conducted standard multiple regression analyses on the predictors of the consumer decision-making process (Table 2). Standard multiple regression is one of the types of multiple regressions commonly used when the sample size is large. According to Stevens (1996, p.72), "for social science research, about 15 participants per predictor are needed for reliable equation" (cited in Pallant, 2013). On

screening of the regression outputs, there was no violation of assumptions such as multicollinearity of variables, the Normal P-P Plot suggests no major deviation from normality as all the points lie in a straight diagonal line from bottom left to top right and that the scatterplot has no outliners.

The tolerance value for each independent variable ranged from 0.604 to 0.754 which is less than 10 and also supported by the VIF values which are well below the cut-off of 10. Further analyses revealed that 'factors in communicating', 'Influencers recommendations', 'opinion leaders advice' and 'agreements with reference partner' were statistically significant (*) making a unique contribution of prediction to the decision-making process. Of these predictors, the largest beta coefficient is 0.459 which is '*agreement with reference partner'* suggesting that the variable makes the strongest unique contribution to the millennial's decision-making that has the tendency to purchase. It indicates the reasons why this group of millennials prefers to go to their reference partners. Some of which could be that they need them for expert advice that enables them to make the correct decision based on their experience, know the best deal and where to get the products.

The adjusted R square value 0.490 (49%) indicates the variance of predictors in the decision-making process which is an acceptable range (Pallant, 2013). Finally, the regression model in this study reached statistical significance with P<0.005.

Table 1. ANOVA analysis for the **age group**

Composite Constructs		Sum of Squares	Mean Square	*F*	Sig.	Levene's test
Share view	Between Groups	810.674	270.225	**2.941**	0.025*	0.598
	Within Groups	23890.098	91.885			
Places	Between Groups	449.583	149.861	**5.559**	**0.001***	0.146
	Within Groups	7008.947	26.957			
Agreement	Between Groups	67.967	22.656	0.741	0.528	0.505
	Within Groups	7947.063	30.566			
Decision Making Stage	Between Groups	255.214	85.071	1.372	0.252	0.221
	Within Groups	16125.691	62.022			
Advices	Between Groups	112.724	37.575	1.353	0.258	0.343
	Within Groups	7219.181	27.766			
Important	Between Groups	93.491	31.164	0.327	0.806	0.505
	Within Groups	24764.202	95.247			
Recommend	Between Groups	1065.743	355.248	3.128	**0.026***	0.499
	Within Groups	29528.196	113.570			
Communicati on Factors	Between Groups	853.228	284.409	0.978	0.403	0.178
	Within Groups	75577.439	290.682			
Forms	Between Groups	908.111	302.704	**2.768**	**0.042***	0.143
	Within Groups	28432.419	109.355			

*Note: p is significant at 0.05 level**

Implications

Despite the growth of social commerce (Esmaeili and Hashemi G (2019) where utilizing software can reveal several key influencers and relationships), this study has several implications/contributions from a theoretical point of view. The study showed that young Malaysian consumers are more inclined to use social media (e.g., Facebook) than any other media in their day to day interactions in their social groups. So the results suggest that new forms of collective intelligence emerge because of the Internet, web 2.0, 3.0 and social media tools, which is consistent with that of Salminen's (2012) findings. Carter and Yeo (2018) supported this contention as they found that "family," "friends," "peers," "lecturers," and "classmates" were the prime influences/influencers, typical of Malaysian culture. All the independent variables such as gender, programs, the factor of communication, forms of communication, the importance of opinion leaders, methods of advice, agreement with opinion leaders, location to purchase, and forms of communication, except for age correlated positively to the decision-making stages. The study has the following suggested implications from a practical point of view. Whilst the study has confirmed and reinforced the importance of social media as a potent force in communication to and within Millennial groups, the study has highlighted that 'collective intelligence' in the purchase decision-making process has emerged as a result of the coalescing of social media with other complex individual factors like methods of advice and agreement with opinion leaders. So, it is no longer a matter of just using the social media to reach younger consumers like millennials, but the way the communication resonates with the intended audience and generates a 'collective wavelength' within it (the 'swarm' are vital ingredients to aiding the purchase decision.

Table 2: Standard Multiple Regression

Model	Beta	t	Sig.	Collinearity Statistics	
				Tolerance	VIF
Factor	0.118	2.127	**0.034***	0.632	1.583
Recommended	0.129	2.312	**0.022***	0.618	1.619
Important	-0.058	-1.024	0.307	0.608	1.644
Advices	0.261	4.612	**0.000***	0.604	1.655
Agreement	**0.459**	8.285	**0.000***	0.631	1.586
Places	0.026	0.494	0.622	0.710	1.409
Forms	-0.088	-1.740	0.083	0.754	1.327
Share View	-0.088	-1.740	0.083	0.754	1.327
F		37.139			
Sig.		0.000			
R Square		**0.504**			
Adjusted R square		**0.490**			

*Note: p is significant at 0.05 level**

DV- Decision making stage

Conclusion, Limitations and Future Research

This study has shown the complexity of millennial consumers' purchase decision making, particularly highlighting the role of 'Collective Intelligence' in the whole process. Not only have marketers to be nuanced in the type of social media that they use but have to be cognizant of the many influencers and influences in the process and the dynamic nature of the interaction between influencers and the intended purchaser. It would appear that the challenge is to find the key purchase influencer, but the study shows that this varies by gender and from purchase

situation to situation and by the multiple platforms that the consumer engages with during the stages to purchase. We believe this study is the first of its kind in a developing country context. The usual limitations apply of a country-specific context, small sample size and a specific type of respondent, i.e. undergraduates. Studies in other contexts and with different respondents may yield different results. Further research could be conducted in other contexts and further explore the dynamics of the 'collective', looking further at other possible components, relationships and interactions to gather further insights into the complex world of Millennials' purchasing.

References

Bhattacherjee. A. (2012). *Social science research: Principles, methods, and practices*. 2nd edition. University of South Florida Scholar Commons.

Bollen, J., Mao, H., & Zeng, X. (2011). Twitter mood predicts the stock market. *Journal of computational science*, *2*(1), 1-8.

Bonabeau, E. (2009). Decisions 2.0: The power of collective intelligence. *MIT Sloan management review*, *50*(2), 45-52.

Brönnimann, L. (2013). *Multilanguage sentiment-analysis of Twitter data on the example of Swiss politicians*. Available at: http://www.twitterpolitiker.ch/Paper_Swiss_Politicians_On_Twitter.pdf. (accessed 12 March 2017).

Bryman, A., & Bell, E. (2007). *Business research methods.* 2nd edition. Oxford University Press.

Burns, Alvin C., & Bush, R.F. (2010). *Marketing research, textbook and instructor's manual*. 6th edition. Pearson Education Inc.

Carter, S., & Yeo, A. C. M. (2018). Internet-enabled collective intelligence as a precursor and predictor of consumer behaviour. *Economics, Management and Financial Markets*, *13*(4), 11-38.

Castro, J., Lu, J., Zhang, G., Dong, Y., & Martínez, L. (2017). Opinion dynamics-based group recommender systems. *IEEE Transactions on Systems, Man, and Cybernetics: Systems*, *99*, 1-13.

Chen, J., Teng, L., Yu, Y., & Yu, X. (2016). The effect of online information sources on purchase intentions between consumers with high and low susceptibility to informational influence. *Journal of Business Research*, *69*(2), 467-475.

Cho, Y., Hwang, J., & Lee, D. (2012). Identification of effective opinion leaders in the diffusion of technological innovation: A social network approach. *Technological Forecasting and Social Change*, *79*(1), 97-106.

Chung, S., & Liu, S. (2011). Predicting stock market fluctuations from twitter. *Berkeley, California*. Available at stat.berkeley.edu. (accessed 10 January 2017).

Denscombe, M. (2014). *The good research guide: for small-scale social research projects*. UK: McGraw-Hill Education.

Devellis, R. (2012). *Scale development theory and applications*. New York: Sage Publications.

Dong, Y., Zhan, M., Kou, G., Ding, Z., & Liang, H. (2018). A survey on the fusion process in opinion dynamics. *Information Fusion*, *43*, 57-65.

Dörnyei, Z. (2007). *Research methods in applied linguistics*. New York: Oxford University Press.

Elshendy, M., Colladon, A. F., Battistoni, E., & Gloor, P. A. (2018). Using four different online media sources to forecast the crude oil price. *Journal of Information Science*, *44*(3), 408-421.

Esmaeili, L., & Hashemi G, S. A. (2019). A systematic review on social commerce. *Journal of Strategic Marketing*, *27*(4), 317-355.

Feldman, R. (2013). Techniques and applications for sentiment analysis. *Communications of the ACM*, *56*(4), 82-89.

Freeman, L. C. (1978). Centrality in social networks conceptual clarification. *Social networks*, *1*(3), 215-239.

Gloor, P. A. (2017). *Sociometrics and human relationships: Analyzing social networks to manage brands, predict trends, and improve organizational performance*. UK, Bradford: Emerald Publishing Limited.

Gloor, P. A. (2017). *Swarm leadership and the collective mind: Using collaborative innovation networks to build a better business*. UK, Bradford: Emerald Publishing Limited.

Heylighen, F. (1999). Collective Intelligence and its Implementation on the Web: algorithms to develop a collective mental map. *Computational & Mathematical Organization Theory*, *5*(3), 253-280.

Ignatow, G., Evangelopoulos, N., & Zougris, K. (2016). Sentiment analysis of polarizing topics in social media: News site readers' comments on the Trayvon Martin controversy. In Robinson, L., Schulz, J., Cotten, S. R., Hale, T. M., Williams, A. A., and Hightower, J. L. (eds.). *Communication and Information Technologies Annual: [New] Media Cultures* (259-284). Emerald Group Publishing Limited.

Pallant, J. (2013). *SPSS survival manual*. 5th edition. UK: McGraw Hill.

Ritterman, J., Osborne, M., & Klein, E. (2009, November). Using prediction markets and Twitter to predict a swine flu pandemic. In *1st international workshop on mining social media* (Vol. 9, 9-17). ac. uk/miles/papers/swine09. Pdf. Accessed 10 October 2017).

Saif, H., He, Y., a&nd Alani, H., (2012). Semantic sentiment analysis of Twitter. In *the 11th International Semantic Web Conference*, The Open University, Milton Keynes. Available at: http://oro.open.ac.uk/34929/1/76490497.pdf. Acesssed 10 October 2017.

Salem, M. Z. (2018). Effects of perfume packaging on Basque female consumers purchase decision in Spain. *Management Decision*, *56*(8), 1748-1768.

Salminen, J. (2012). *Collective intelligence in humans: A literature review* [online], MIT, Collective Intelligence. http://arxiv.org/abs/1204.3401

Song, T., Yi, C., & Huang, J. (2017). Whose recommendations do you follow? An investigation of tie strength, shopping stage, and deal scarcity. *Information & Management*, *54*(8), 1072-1083.

Stevens, J. (1996). *Applied multivariate statistics for social sciences*. 3rd edition. Mahwah, NJ: Lawrence Erlbaum.

Tabachnick, B. G., & Fidell, L. S. (2013). *Using multivariate statistics.* 6th edition. Boston: Pearson Education.

Trigo, P., & Coelho, H. (2011). Collective-intelligence and decision-making. In *Computational Intelligence for Engineering Systems* (61-76). Springer, Dordrecht.

Vernette, E. (2004). Targeting women's clothing fashion opinion leaders in media planning: an application for magazines. *Journal of Advertising Research*, *44*(1), 90-107.