

THE INTERNATIONAL JOURNAL OF BUSINESS & MANAGEMENT

The Effect of Crowd Sourcing on Social Media in New Product Development

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Abstract:

The broad objective is to examine the effect of crowd sourcing on social media in new product development using primary source of data which was randomly sourced from Lagos state residents, Nigeria. However, Pearson correlation and regression analysis were used as the estimation techniques in the study. The result of the correlation analysis revealed that new product social media (NPSM) and crowd sourcing (CS) has positive and significant relationship between the two variables, NPSM and BP shows a positive correlation between NPSM and BP, the correlation value of NPSM and firm performance (FP) depicts a positive relationship between each other, while the result of NPSM and customer convenience shows positive correlation between the two variables. The regression coefficient revealed that at constant, there exist positive but insignificant impacts on the dependent variable. Furthermore, crowd sourcing coefficient exhibits a positive and significant impact on the new product social media, business productivity (BP) exhibits negative and insignificant impact on new product social media, firm performance has a positive impact but not significant to influence new product social media, while customer convenience has positive and significant impact on new product social media during the study period.

Keywords: Product, social media, crowd sourcing, firm performance, business productivity

1. Introduction

The acceptance of social media networks has prompted businesses/organizations to reach out to the target audience in showcasing their products, seeking opinions, and achieving their goals. Social media is a subset of internet that allows interaction between two or more persons or businesses. Social media has made products close to the buyers and the buyers close to the products without interfering or seeing the seller or the producer. In this way, social media has transformed how organizations collaborate and speak with their customers, just as how they build up and execute their customer relationship strategies. However, crowd sourcing is a means of identifying a task or gathering of activities to complete a movement inside an organization, this task is then discharged to a 'crowd' who are welcome to play out the task in the interest of the organization for a stipulated reward. Gilchrist (2008) opined that crowd sourcing is the way toward getting to assemblies of individuals with known or characterized qualities and tapping their insight to make something of significant worth. Furthermore, Howe (2006) defined crowd sourcing as the representation of a company or institution taking a function once performed by employees and outsourcing it to an undefined network of people in the form of an open call. The crucial prerequisite is the use of the open call format and the large network of potential people. In developing new product, crowdsourcing and social media could play a significant role in the sense that the participants could easily spread the product across board since they partake in the task formation. More so, some organizations embrace social media to publicizing tasks on new ideas or products development in the form of outsourcing to the crowd and granting a reward in return to those that completed the task. This process refers to the use crowdsourcing via social media by the firms in seeking ideas or information on some tasks which have not been able to achieve internally. Whitla, (2009) discovered that some organizations have applied crowdsourcing by disseminating activities on their websites. Kavaliova, Virjee, Maehle and Kleppe (2016) viewed that many crowdsourcing initiatives fail as a result of low engagement and participation. Despite the features of crowd sourcing via social media, most of the firms particularly in the developing countries are still not using crowd sourcing as means to showcasing their new product and this left some product unacceptable while some could not withstand the competitive challenges. With this, this necessitates this study to further add to the existing literature on the use of crowd sourcing in connection to social media in showcasing new product development.

2. Empirical Review

Saxton, Oh and Kishore (2010) carried out the rules of crowdsourcing: models, issues, and systems of control. Multiple search sampling was used with content analysis. From the analysis, the study developed a taxonomic theory of crowdsourcing by organizing the empirical variants in nine distinct forms of crowd sourcing models. Simula, *et al.* (2013) used industrial marketers on crowd sourcing in the social media in Finland. The results revealed significant practical challenges to overcome before social media can be effectively utilized as a fully functioning crowd sourcing enabler. Van-der-Bank & Van-der-Bank (2015) wrote on the impact of social media in connection with the advantages and disadvantages in South Africa. The study used content analysis and it showed that empirical survey affirms the significance of bunches in economic development, contributing emphatically to the development procedure, encouraging associations with different organizations and foundations to more likely address consumer needs, diverting learning and data.

Kavaliova, Virjee, Maehle and Kleppe (2016) investigated crowd sourcing innovation and product development. The study used game elements and design techniques to motivate contributions to a crowd sourcing project. The findings revealed that customers always seek for fun and invent actions without expecting anything in return, if they perceive it as being fun. Lam (2016) carried out an investigation on develop and commercialize new ICT using social media. The study used qualitative research approach and the findings show that the platform is generated to help companies to better understand development process and practices that need show certain phases of the process and to accelerate the innovation in entering a new market. Srinivasan, Bajaj and Bhanot (2016) investigated social media marketing strategies of MSMEs on customer acquisition and retention in India using exploratory research design. The findings revealed that social media involvement has a strong impact on brand awareness and trust, as result, influences on customer acquisition and customer retention. Lionel (2017) examined that impact of social media on innovation in SMEs businesses in UK using interview type of qualitative survey and the research identified community culture and company size as the factors that are likely to impact the successful adoption of the model in organizations.

Author's Name	Country	Topic	Method
Saxton, <i>et al.</i> (2010)		The rules of crowdsourcing: models, issues, and systems of control.	Multiple search sampling
Simula, Tollinen and Karjaluoto (2013)	Finland	Industrial marketers on crowdsourcing in the social media.	Qualitative Analysis
Van-der-Bank et al (2015)	South Africa	Impact of social media in connection with the advantages and disadvantages in South Africa	Content Analysis
Kavaliova, Virjee, Maehle and Kleppe (2016)		Crowdsourcing innovation and product development.	Game elements and design techniques
Lam (2016)		Develop and commercialize new ICT using social media.	Qualitative research approach
Srinivasan, Bajaj and Bhanot (2016)	India	Social media marketing strategies of MSMEs on customer acquisition and retention	Exploratory research design
Lionel (2017)	UK	Impact of social media on innovation in SMEs businesses in UK.	Netnography and interview type of qualitative survey
Allen, Chandrasekaran, and Basuroy (2018)		Design crowdsourcing: the impact on new product performance of sourcing design solutions from the crowd.	Qualitative Analysis

Table 1: Summary of Empirical Review
Source: Author's computation (2019)

3. Research Methods

This study used random sampling technique and analytical survey. The target population was 100 respondents for each of the two-local government selected in Lagos state, Nigeria. In total, there was 200 respondents participated in this study. The questionnaire was constructed using the Likert's rating scale of 5 points that is Strongly Agree, Agree, Neutral, Strongly Disagree, & Disagree. The responses from the respondents will be analysed using coefficient alpha (Cronbach's alpha) and based on the rule of thumb, a Cronbach-Alpha factor above 0.5 was considered reliable. Regression analysis shall be used to achieve the study goal. To certify the reliability of the instrument in this study, the research instrument was subjected to test-retest technique, whereby the instrument was administered to two local government area which are Ikeja Local Government and Lagos Island Local Government at random during the process.

Regression Model

$NPSM = f(CS, BP, FP, CC)$

Where

NPSM = New Product Social Media

CS = Crowd sourcing
 BP = Business Productivity
 FP = Firm Performance
 CC = Customer Convenience

4. Description and Measurement of Variable

Variable	Description
New Product Social Media (NPSM)	The new product social-media is the means of using social-media to showcase in product and this is used as the dependent variable in this study.
Crowd sourcing (CS)	Crowd sourcing is used as the independent variable as one of the determinants of new product social media
Business Productivity BP)	Business productivity is used as the independent variable
Firm Performance (FP)	Firm performance is used as the independent variable
Customer Convenience (CC)	Customer convenience is also used as the independent variable

Table 2: Variable Descriptions
 Source: Author's compilation (2019)

4.1. A-priori Expectation

The a priori expectation shows the sign independent variable(s) are expected to show different to dependent variable. The mathematical expression is represented as;

$\frac{\partial \text{NPSM}}{\partial \text{CS}} > 0$, crowdsourcing is expected to be positive to new product using social media

$\frac{\partial \text{NPSM}}{\partial \text{BP}}$ or $\frac{\partial \text{NPSM}}{\partial \text{FP}} > 0$, business productivity is expected to be either positive or negative to new product using social media.

$\frac{\partial \text{NPSM}}{\partial \text{FP}} > 0$, firm performance is expected to be positive to new product using social media.

$\frac{\partial \text{NPSM}}{\partial \text{CC}} > \text{or} < 0$, customer convenience is expected to be either positive or negative to new product using social media.

5. Result Discussion

This section discusses the findings from the analysis using the data gathered from the respondents of the selected state in Nigeria. However, the analyses were presented and discussed as follows:

5.1. Reliability Testing

Cronbach's Alpha	No. of Items
.906	15

Table 3: Result
 Source: Writer's Computation (2019)

The questionnaire was subjected to test-retest analysis to confirm the reliability of the question. The test of Cronbach-Alpha shows the value of 0.906 (90.6) indicating that the questions have above 90% reliability.

5.2. Correlation Analysis

		NPSM	CS	BP	FP	CC
NPSM	Pearson. Correlation,	1	.625**	.382**	.415**	.511**
	Sig. (2tailed)		.000	.000	.000	.000
	N.	201	201	201	201	201
CS	Pearson. Correlation.	.625**	1	.581**	.505**	.576**
	Sig. (2tailed)	.000		.000	.000	.000
	N.	201	201	201	201	201
BP	Pearson. Correlation,	.382**	.581**	1	.459**	.386**
	Sig. (2tailed)	.000	.000		.000	.000
	N.	201	201	201	201	201
FP	Pearson. Correlation,	.415**	.505**	.459**	1	.511**
	Sig. (2tailed)	.000	.000	.000		.000
	N.	201	201	201	201	201
CC	Pearson. Correlation.	.511**	.576**	.386**	.511**	1
	Sig. (2-tailed).	.000	.000	.000	.000	
	N.	201	201	201	201	201

Table 4: Correlations
 Source: Writer's Computation (2019)

The table above shows the result of correlation report among the variables employed. It was revealed that new product social media (NPSM) and crowdsourcing (CS) has the value of 0.625 and the p-value is 0.000, indicating that here exist a positive and significant connection between the two variables. NPSM and BP show the correlation value of 0.382 and the significant value of 0.000, signifying that positive association exist between NPSM and BP. The correlation value of NPSM and firm performance (FP) is 0.415 with significant value of 0.000, indicating NPSM and FP exist positive relationship between each other. However, the result of NPSM and customer convenience show correlation value of 0.511 with significant value of 0.000 showing that there exists positive correlation between the two variables.

5.3. Report of Regression

	R	R-Square	Adjusted R-Square	Std. Error
1	.655 ^a	.428	.417	1.081

a. Predictors: (Constant), CC, BP, FP, CS

Table 5: Model

Source: Writer's Computation (2019)

The R-square value of the above table shows the value of 0.428 (42.8). this implies that the independent variables could control about 42.8 percent variation in the dependent variable.

		Sum sq	d.f	Mean-Sq	F-test	Sig.
1	Regression	171.740	4	42.935	36.721	.000
	Residual	229.166	196	1.169		
	Total	400.905	200			

Table 6: ANOVA

a. Dependent Variable: NPSM

b. Predictors: (Constant), CC, BP, FP, CS

Source: Writer's Computation (2019)

The ANOVA result presented above shows sum of the square regression (171.740), the residual (229.166), the mean square (42.935) and the F-statistics. The result of the F-statistic value is 36.721 with the significant value of 0.000, implying that the independent variables can influence the predict variable.

		Unstandardized-Coefficients		Standardized-Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.212	.206		1.029	.305
	CS	.532	.086	.473	6.209	.000
	BP	-.005	.072	-.005	-.074	.941
	FP	.093	.083	.075	1.115	.266
	CC	.236	.081	.202	2.902	.004

Table 7: Coefficients

a. Dependent Variable: NPSM

Source: Writer's Computation (2019)

The regression coefficient reveals the relationship between the dependent variable (NPSM) and independent variables (CS, BP, FP, and CC). it shows that the coefficient at constant is 0.212 and the significant value is 0.305, indicating that at constant, there exist a positive but insignificant impact on the dependent variable. Furthermore, crowd sourcing coefficient is 0.532 with significant value is 0.000, implying that crowd sourcing (CS) exhibits a positive and momentous effect on the new product social media. The business productivity (BP) coefficient value is -0.005 with significant value of 0.941, indicating that business productivity exhibits negative and insignificant impact on new product social media. The coefficient value of firm performance is 0.093 with the significant value of 0.266, implying that firm performance has a positive impact but not significant to influence new product social media. Also, the coefficient value of customer convenience is 0.236 with significant value of 0.004, indicating that customer convenience has positive and significant impact on new product social media during the study period.

6. Conclusion

Based on the survey conducted in this study, it was concluded that crowd sourcing has impacted positive to many organizations, and effective use of social media increases business productivity and decreases cost of production, while daily or weekly programme on social media attracts more customers to participate in crowd sourcing using both the online advertising and other forms of advertising as a form of crowd sourcing. More so, it was equally concluded that new product social media and crowd sourcing has positive and significant relationship, new product social media and business productivity showed a positive correlation relationship, new product social media and firm performance depicted a positive relationship while new product social media and customer convenience showed positive correlation. In line with

the above, it is recommended that companies are urged to implement crowdsourcing for new product development via social media, which instantaneously spread the product across its target audience. It is also recommended that organizations should use crowdsourcing and social media to improve customer convenience to enabling business productivity and firms' performance.

7. Suggestion for Further Studies

This study had carried out the effect of crowdsourcing on social media in new product development employing different conceptual frameworks from the previous scholars and the findings of the study had showed a robust outcome based on the analyses. This study then suggested further researchers in this area to examine the connection between crowdsourcing and social-media on organizational efficiency of some selected firm using country specifics.

8. References

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