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Digital Divide in Social Media Prosumption: Proclivity, Production Intensity, and Prosumer Typology among College Students and General Population

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Abstract

This paper examines the digital divide in social media prosumption. It compares college students' and general population's prosumption behavior in social media and proposes a set of measures of prosumption in online media settings with special emphasis on social media including prosumption proclivity, production intensity, and a prosumption index which can be used in future studies on social media and other user-generated content sites. We classified prosumption behavior in a quadrant of four main types along the two dimensions of production and consumption. A polarized trend of prosumption was observed. Prosumption proclivity is a much stronger facilitator of social media consumption than participation or production intensity especially among college students.

Key Words: Social Media, Prosumption, Participation, Digital Divide, Media Consumption, User-generated content.

The mass media is probably the entity most affected by the Internet technology. Not only can media content, the product of mass media, be totally digitized, but also the media content can be delivered to the audience via the Internet directly without other intermediaries. The rise of social media such as Facebook further revolutionized the business of content provision as these web 2.0 applications transformed individuals to be producers of content in an easily accessible format to its more than 800 million active users (Facebook, 2012).

This paper aims at examining the disparity in audience's involvement in the production and consumption of content in social media from a production resource perspective. Prosumption is a socio-economic concept and phenomenon referring to both

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production and consumption of goods by the same people. In the contexts of social media, the prosumption concept can be easily applied because users can choose to assume both roles as a producer and a consumer of media content. Research on peer collaboration, media content as an intellectual product, or changing nature of the audience, suggest that media, especially social media, are conducive to prosumption. This study will examine whether disparity in production resources among consumers can affect the level of prosumption in a new media environment where social media is conducive to prosumption. We propose a set of measures of prosumption in online media settings with special emphasis on social media including a prosumption index which can be used in future studies on this topic.

Literature Review

Peer Collaboration: From Prosumption to Prodsusage

The concept of prosumption, can be attributed to Alvin Toffler (1980) who argued that contemporary society is integrating production and consumption in his book, *The Third Wave*. Other similar contemporary terms such as crowdsourcing and user-generated content describe the phenomenon of media relying on mass users, rather than a small number of selected professional institutions, for producing content. Ritzer and Jurgenson (2010) further explicate the concept in the digital era to illustrate how Web 2.0 applications are facilitating the prosumption of user-generated content such as Wikipedia, YouTube, Facebook, and others. Ritzer (2009) used the fast food industry such as McDonald's as a predecessor of prosumption. In a sense, prosumption is self-service, or in Ritzer and Jurgenson's words, "putting consumers to work." By relegating the production of content digitally to the users, sites such as Wikipedia and YouTube obtain large quantities of free and voluntary contribution that attract online audiences (Tapscott & Williams, 2006). Based on this perspective, the ultimate benefactors of such user-generated content are the sites that offer the platform for sharing the content. They can obtain revenues from advertising and audience data sales. In addition, they can also establish credibility and authority over knowledge domains across the Internet.

The accusation of exploitation of free labor inherent in the conception of prosumption has been criticized by advocates of peer production. For example, Benkler (2006) sees Web 2.0 applications as a platform for better democratic participation which fosters a more critical and self-reflective culture. A concept called "prodsusage" was proposed by Bruns (2008) to characterize the mutually beneficial nature of user-generated content. Prodsusage emphasizes a hybrid role of the users as both producers and users that represents the erosion of the distinction between production and consumption based on the principle of open participation, communal evaluation, fluid heterarchy, and the status of always in a work-in-progress stage, and common property with individual rewards. The contribution is based on good faith, rather than material reward (Reagle, Jr., 2010). Such advocacy of peer collaboration in democratizing economics, politics and culture has been critiqued by Kreiss, Finn, and Turner (2011) as a "utopian orthodoxy." They refuted the assumptions of the peer collaboration advocates and showed that peer production was not an unqualified good and not egalitarian because such production was supported primarily by existing bureaucracy especially the higher education institutions.

We contend that the commercial media industry is an industry about getting audiences (Ang, 1991). Social media such as Facebook and Twitter are an ideal platform for the industry to maximize audiences' attentions and inputs. They let users create and exchange information through their easy to use interface and free Web 2.0 applications. They rely on the network externalities effect or reciprocity effect in which the effect of the media depends on a number of active users and their active communication among

themselves (Katz & Shapiro 1985). The “free” and “mutual exchange” applications allow the site to quickly accumulate the critical mass needed for any new medium to take hold in a marketplace (Markus, 1987). The more people use it, the higher the value of the medium or the site becomes. Social media make use of such viral effect in which their users will attract more users by sharing the content they posted on social media sites.

Media Content as an Intellectual Product

Media economics researchers identified media content is an intellectual product in which the first copy production cost is high but reproduction cost is low to none (Hoskins, McFadyen, & Finn 2004; Shapiro & Varian, 1999). The intellectual impact of media content is quite valuable and many times higher than its economic value to institutions and individuals in the society. The power of an intellectual product lies on its potential influence on the minds of the consumers by providing them with knowledge, persuading them on an issue position, or forming an opinion on a subject. Because of this potential, those who would like to create a social impact and exert ideological control will be eager to produce media content even the content itself may not be profitable. Hence it explains why many sites have free content provided to the public even if they don't have a sustainable business model (Ha, 2003). For the same reason, cross-subsidy by a corporation or non-profit organization is very common as shown in a study of webcasting practices around the world (Ha, 2007).

Changing Audience Research Paradigm

Studies on media audiences have experienced dramatic changes in the research paradigms (Abercrombie & Longhurst, 1998). In the 60-70s, Behavioral Paradigm (e.g., Uses and Gratifications) dominated audience studies by explaining audience's media use through motivations, perceptions of functions of the media, and the gratifications sought from the medium. In the 1980s, with the rise of post-modernism and critical theories, Incorporation/ Resistance Paradigm (IRP) was popular explaining audience consumption of media content through the dialectic of incorporation and resistance. In the 1990s, the spectacle paradigm emerged as another popular critical theory to explain audience behavior. In the 21st century, interactive media technologies facilitate engagement of the audience and audience autonomy (Napoli 2010).

The basis of these critical theories is that the world is defined by assumptions taken for granted and media impose the dominant ideology on the public. In the tradition of Gramsci's (1992) cultural hegemony, media facilitated the cultural leadership by a dominant class or ruling bloc through their professionally created media content such as movies, news, dramas, and more. With time-shifting devices such as DVR and portable media such as MP3 players, media consumption is even more prevalent as every bit of idle time can be occupied by media use. Nevertheless, the more fundamental shift in the research paradigm is the desire for performance or expressing oneself using the Web 2.0 platform. Kershaw (1994) already discussed the performative society as one in which mass media is an importance source of everyday performance. Both the audience and the media perform. The fusion of media forms facilitates the increase in diffused audience with spectacle and narcissism. Lasch (1978) described the American people as modern narcissists who live only in the present (without looking back history or vision of the future), worship celebrities, depend on others to solve problems, demand immediate gratifications, have difficulty in distinguishing self from others, and concern only their image as seen by others. Audiences have just become markets of cultural goods. A recent study by Kaiser Family Foundation revealed the impact of media globalization in creating a new individualism and narcissism of American youths (Malikhao & Servaes, 2011). Their inflated view of themselves is further fostered in social media.

However, recent studies on online video posting (e.g., Chun & Lee, 2010; Park, Lee, & Jung, 2010) show that many consumers are reluctant to post content. Peer pressure is the most important factor to motivate them to post content as individual subjective norm. Those who have high intention to post content see their significant others are also posting content to websites. Chun and Lee (2010) categorized the Internet activities into two groups: information seeking and information creation, which is equivalent to content consumption and content creation/production.

Digital Divide, Production Resources, and Willingness to Contribute Online

This study advances the research on digital divide by showing that despite the possibility of a dual role of being both a producer and a consumer in social media, many will not take this possibility due to disparity in production and content resources to produce content. Research on digital divide generally focuses on the social consequences of the “haves” and “have-nots” of Internet access (e.g., Norris, 2001; Vicente & Lopez, 2010) and tracks the reduction of the gap between the haves and have-nots over time within the population in one country or between countries (e.g., Howard, Busch, & Sheets, 2010). Eventually research on digital divide developed into the so-called “second level divide,” which focuses on the gap in Internet skills and proficiency among the Internet users and how it will affect usage and the benefits they could get from the Internet (e.g., Hargittai, 2002; Min, 2010; van Deursen & van Dijk, 2011). Current digital divide studies frame the idea in both disparity in access and skills (Epstein, Nisbet, & Gillespie, 2011). Nonetheless, digital divide researchers have not paid enough attention to the different resources behind the creation of user-generated content as a newest and fastest-growing form of Internet content consumption and production.

Particularly, it is important to understand that the production of content is not free. Apart from the labor of assembling the content, certain media require more production resources than others. For example, a video product review requires much more production resources than a text review and certain content sites (e.g., Wikipedia) require more knowledge expertise than others. Hence availability of video and picture production resources and frequency of using these resources can affect the amount of contribution of content. In addition, the interest in producing content varies by consumers. Beyond creating content, people have different motivations to share or contribute (Mendelson & Papacharissi, 2010). Many previous studies documented the unwillingness of people to share information on the Internet due to privacy concerns (Chun & Lee, 2010; Preece, Nonnecke, & Andrews, 2004). Li’s (2011) study of contribution to online communities revealed that expectation of social approval is the main reason for college students to contribute to online communities, not the cost of contribution or expected reward received from the contribution.

Prosumption vs. Participation

It should be noted that there is a substantive difference between prosumption and a typical user participation called for by websites. In a social media setting, prosumption is an initiative taken by the users to produce content when they are consuming a website. It is an intentional effort of the users to produce which requires substantial labor input from the users. Those who contribute the content have a message to tell or something to show to others. Some content is intended for public consumption such as YouTube, Wikipedia, or public sharing on Facebook. But in personal pages of social media such as Facebook, Google Plus, or LinkedIn, the content is intended for audiences within the consumer’s social network (“Friends”) who are privately and mutually linked by the consumers. Audience participation, on the other hand, is a low-risk involvement encouraged by websites. Common online participation activities include ratings on online content,

completing opinion polls on a given topic, or participating in contests to win a prize. Unlike prosumption behavior, user input is typically limited in these activities. The user is only required to provide some information in response to call for participations. Only a small amount of commitment is expected from the user and no original ideas or substantial content is expected in such user participation.

In other words, audience participation is a relatively passive and rudimentary form of prosumption. It is more a tool to engage consumers than creating original content. Prosumption behaviors such as open-ended comments and suggestion postings will entail massive reciprocal value between the site creators and the users of the posted content. The sites with many prosumers will provide the platform to build even larger audience base and the users will be able to take advantage of it to disseminate and/or store their content.

Hypotheses

Based on the review of critical audience theories and a reconceptualization of digital divide which emphasized media as resources for individuals, and the differentiation between prosumption and participation, we developed a set of hypotheses examining the relationship between resources and prosumption and how prosumption proclivity, production intensity, and participation intensity affect social media consumption. Prosumption proclivity was defined as the tendency of consumers to take advantage of various channels to produce online content during their online media consumption. Production intensity was defined as the frequency of producing online content in a period of time.

H1. The more the content resources of the consumers, the more likely they will prosume.

H2. The more digital production devices the consumers own, the higher the production intensity.

H3a. Prosumption proclivity positively predicts social media consumption.

H3b. Production intensity positively predicts social media consumption.

H3c. Participation intensity positively predicts social media consumption.

Typology of Prosumers

To fully illustrate prosumption behaviors, we also need a classification along the two dimensions of prosumption – the production dimension and the consumption dimension. Using these two conceptual dimensions, we develop a typology of prosumers into four quadrants based on the level in production and consumption. The first group is the high production, high consumption prosumers which means that they spend a lot of time in producing content for social media and other online media. They also spend a lot of time consuming these media as well. We labeled this type as *Enthusiasts/Dedicated Prosumers*. They were also referred to as Professional Amateurs by other researchers such as Leadbeater & Miller (2004). They were heavy users of the medium and produce frequently the content for the sites. Based on Abercromie and Longhurst's (1998) research, Enthusiasts/Dedicated Prosumers are the fans, enthusiasts, and skilled audiences who are self-organized with higher level of media competencies. Some of the prosumers belong to the narcissists who are interested in performing to the public as described by Lasch (1978) and Keshaw (1998). But others may have a good cause such as advocates for non-profit groups or political activists who utilize the social media to garner support and educate the public on an issue.

The second group is the high production, low consumption prosumer. We labeled them as *Contributors*. These people are primarily interested in performing to others, but not interested in watching others' work. Their utility value to the user-generated content site is the content they provide, not the time they consume the websites. These contributors are taking advantage of the massive reach and public nature of the social media sites to get their points across.

The third group is the low production, but high consumption prosumers. Previous studies on consumer engagement called them *Lurkers* or *Passive Audience* (Preece, Nonnecke, & Andrews, 2004). We labeled them as *Spectators* because they pay attention and spend lots of time on social media and user-generated websites. But, they just don't want to contribute or share with others. Spectators sometimes are lack of skills and/or resources to contribute content. These spectators do not produce, but by their mere heavy consumption of the social media sites, they support the network externalities which maximize the economic and communication impact of these sites (Katz & Shapiro, 1985). They are the audience base that is important to sustain any media. The larger is the spectator proportion in the site, the more valuable is the site to advertisers because these are the viewers/listeners to advertising messages. They enjoy viewing other people's work.

The last group is the low production and low consumption group which we called them as *Indifferent Bystanders*. They are seldom or never involved in the production of social media content and seldom or never consume social media content. They often lack the access to the Internet or have no or little experience with the Internet. They may also not see any social media content is of use to them.

Instead of using distinct specific labels to describe prosumers in other studies on user-generated content, the prosumer typology we proposed here could be quantified and compared based on the level of production and consumption of content. In addition, the purpose of the typology is to describe the consumer's tendency to prosume in online media in general, but not across all specific sites because prosumption can vary in different sites. For instance, someone can be both an *Enthusiast* in Facebook and an *Indifferent Bystander* in Wikipedia. This particular person will still be counted as an *Enthusiast* in the typology. because overall level of prosumption activity was measured by time spent on production and consumption,

Research Questions

In addition to explain prosumption behavior by content resource and production device ownership, we also examined the demographic predictors of prosumption in social media and included them as control variables in predicting prosumption:

RQ1. What are the demographic predictors of prosumption in social media?

In this study, apart from examining demographic characteristics, production resources, content resources and Internet experience as predictor of prosumption, we also intend to examine the distribution of prosumer types among the college students and general population. We will identify the demographic characteristics of each prosumer type and describe the state of prosumption in social media and online media.

RQ2. What is the distribution of prosumer type among general population and college students using the prosumer typology?

Method

This study is based on a mail and web survey in the Northwest Ohio area from September to December 2010. There were two populations for the study: college students and general population. We used two populations because college students are heavy users of social media and any study involving social media without college students would not be able to reveal the pattern of core supporters of social media. They are not easily reachable through regular household addresses. Hence two sampling frames were used for the two populations:

- (1) Northwest Ohio resident database supplied by a local newspaper, and 2) college students enrolled in general education classes in a large Northwest Ohio public university.

For Northwest Ohio residents, a simple random sample (n=1500) selected from the Northwest Ohio residents database were sent the questionnaire package with a cover letter, a visually attractive questionnaire booklet, and a stamped reply envelope with a fresh one dollar bill as incentive for participation, following the Tailored Design Method suggested by Dillman (2007). The non-respondents of the first mailing were sent a postcard reminder three weeks from the initial contact. E-mail reminders were sent to those who had e-mail addresses. They could choose to respond via web surveys. For college students, 24 general education classes and large introductory lecture classes with a variety of majors and class standings were used to recruit participants and students received extra credit for participating in the study. A total 757 responses were received, of which 281 were from NW Ohio residents (response rate = 18.73%) and 476 were from college students. More than 95% of residents chose to answer by snail mail and all college students responded to the Web survey. Because all students have free Internet access on campus, they could choose to complete the survey at any time they wanted without needing to remember to return the questionnaire.

The web and mail survey questions were identical and also the responses collected from the two modes in this study were considered equivalent. Prior large scale research comparing mail/print and web survey responses show that no substantial differences were found in data quality and equivalence except the difference in response rates (Denscombe, 2006; Shih & Fan, 2008).

The survey, which took approximately 15 minutes to complete, focused on the audience's use and opinion of various media. There were two types of variables related to this research. The first group of questions measured the social media usage and included production device ownership and content resources of the respondents. The second group of questions measured demographic variables such as age, gender, household income, education level, and Internet experience. Their active membership in different organizations was also asked as an indicator of engagement in society.

Measures

Production Resources: There are two types of content that consumers produced for social media. First is the audio-visual content such as videos or pictures. Second is the textual content and news posted by the consumers. Hence in this study, production resources are defined as either the *device* or *content* from which the consumer can produce user-generated content. Two types of production resources were measured in the study: Production device ownership and content resource.

- (1) *Production devices ownership.* The ownership of devices commonly needed to produce multimedia for social media. Because pictures and videos are the most common audio-visual content posted in social media, five production devices to

produce digital sound recordings, videos and pictures were identified in the study: 1) VHS camera, 2) Digital Video Camera, 3) Digital Still Camera, 4) Camera phone, 5) i-Pods. The production device ownership measure was the sum of the ownership of these five media.

- (2) *Content Resources*: Content resources refer to activities that provide users the content input for posting in social media or other user-generated sites. This study examined both textual content resources and visual content resources. For textual content, apart from personal experience, news media consumption undoubtedly provides the ingredients for the consumer to comment on the news and share the information with others in content contribution. For visual content, the more frequently the person takes pictures, especially digital pictures, the more capacities they can share such content in social media and user-generated content sites. In this study, we focus on camera phone pictures because they are usually used very frequently by the consumer and can capture any moment the consumer would like to record. We measured content resources by the total number of hours a week the respondent reported using any news media (which include television, online media excluding social media, print newspapers, magazine and radio) and the number of hours a week the respondent took pictures from their camera phones respectively.

Prosumption Proclivity (PROSP): Eleven common online activities were considered prosumption: 1) creating personal web page, 2) owning a blog, 3) membership in social media sites such as Facebook, 4) posting personal videos online, 5) posting other videos online, 6) posting personal pictures online, 7) posting others' pictures online, 8) posting product reviews, 9) posting comments and suggestions, 10) submitting entry to collaborative content sites such as Wikipedia, and 11) forwarding or discussing news content via social media. The proclivity is measured by the sum of reported presence of these activities. The more opportunities for prosumption the consumer take, the higher the prosumption proclivity. It should be noted that the proclivity measure did not include the frequency of use, it only measured adoption of the various prosumption opportunities. Although some prosumption activities such as a personal web page will require much more effort from the user than just being a member of Facebook, this measure is about the breadth of prosumption activities that consumers undertake, not the effort that they spent on these activities.

Production Intensity (PROI): Prosumption proclivity only shows the tendency or interest of the consumer in producing content, but the variety of content forms does not mean that the consumer produce the content frequently. Hence we also include a measure of production intensity by asking respondents their frequency of posting the different types of online content in a month and updating their own social media page. The production intensity was measured by the sum of the frequency of updating their own social media page and the frequency of online posting of eight types of content in a month: 1) videos made by self and people the individual knows, 2) videos from other sites, 3) pictures taken by self and people the individual knows, 4) pictures from other sites, 5) product reviews, 6) comments and suggestions, 7) entry to collaborative content sites such as Wikipedia, 8) forward or discuss online news content to friends via social media. Because the frequency of updating own social media page employed time intervals such as several times an hour or every several hours, the sum of z-scores were used to compute the composite score instead of the raw scores.

Prosumption Index (PROSI): To measure the intensity of prosumption with both production and consumption taking into consideration, an index was created using the product of the sum of the social media/online media use and production intensity. Apart

from social media uses, many online sites allow prosumption activities to occur such as Wikipedia or retail web sites that post product reviews, to fully capture their prosumption activity, the index consist of both social media and online media use time and the user's reported production intensity on these sites.

PROSI = (Sum of social media use and other online media use) x production intensity.

Media Participation Intensity: In addition to prosumption which is an individually initiated effort, there is also a form of content creation or input through the process of participation. The process is response to the site's request such as opinion poll, participation in contest which requires very minimal effort from the consumer. Consumers have to respond to a set of questions or rules to participate. The input is valuable only when large quantities are obtained. We measured media participation by the sum of frequency of 1) e-mail opinion/poll/rating participation, and 2) participation in contests in a week.

Demographic Characteristics: Age, gender, education, annual household income, and Internet experience in number of years were the five main demographic characteristics we examined as predictors of prosumption proclivity. In addition, respondents were asked if they were active members of different organizations such as political, non-profit, and religious organizations.

Results

Sample Profile

There were more female respondents than male respondents in the sample (41% males and 59% females). The median age of the student sample was 21 and the median age of the resident sample was 56. As expected, residents were much less likely to be members of social media (46.3 %) than college students (88.4%). As shown in Table 1, residents had significantly lower content resources than college students, but their production device ownership was about the same as college students. Their prosumption proclivity, production intensity, and prosumption index were also significantly lower than college students. Because of the substantial differences between the two samples, we separated the data analysis for each sample and showed how the hypotheses and research questions results worked for each sample.

Prosumption and Content Resources

The first hypothesis posited that the higher the content resources of the consumers, the more likely they will prosume. We examined this through two indicators: prosumption proclivity (PROSP) and prosumption index (PROSI). In the student sample, both news media exposure and picture taking frequency have a significant positive correlation to prosumption proclivity

($r_{\text{news}}=0.33, p < 0.01, r_{\text{picture}}=.37, p < 0.01$), production intensity ($r_{\text{news}}=0.31, p < 0.01, r_{\text{picture}}=0.32, p < 0.01$), and prosumption index ($r_{\text{news}}=.21, p < 0.01; r_{\text{picture}}=0.32, p < 0.01$). In the resident sample, the results showed the same pattern: both news media exposure and picture taking frequency had a significant positive correlation to prosumption proclivity ($r_{\text{news}}=0.22, p < 0.01, r_{\text{picture}}=.13, p < 0.01$), production intensity ($r_{\text{news}}=0.22, p < 0.01, r_{\text{picture}}=0.21, p < 0.01$), and prosumption index ($r_{\text{news}}=0.21, p < 0.01, r_{\text{picture}}=.23, p < 0.01$). Hence, this hypothesis was supported by both the student sample and the resident sample.

Production Intensity and Production Device Ownership

The second hypothesis posited that the more digital production devices the consumers own, the higher the production intensity. In both student sample and resident sample, this hypothesis was supported. More ownership of digital production resources is positively correlated with higher production intensity (student sample, $r = 0.11$, $p < 0.05$; resident sample, $r = 0.21$, $p < 0.01$). But the correlation is clearly higher for resident sample than student sample.

Prosumption and Social Media Consumption

Hypotheses 3a-c examined whether prosumption proclivity, production intensity, and online media participation were facilitators of social media consumption. As shown in Table 2, the multiple regression analysis results were similar between student and resident samples, explaining 46% of the variation in social media consumption. But it should be noted that in student sample, prosumption proclivity was the sole strong significant predictor ($\beta = 0.70$, $p < 0.01$). But, in the resident sample, both prosumption proclivity ($\beta = 0.43$, $p < 0.01$) and production intensity ($\beta = 0.41$, $p < 0.01$) almost equally predicted social media consumption. Media participation was not a significant predictor of social media consumption in both samples. Hence H3a that prosumption proclivity positive predicts social media consumption was supported. But H3b that production intensity positively predicts social media consumption was only supported in the resident sample. H3c, participation intensity positively predicting social media consumption was not supported in both samples. Hence, heavy users of social media are likely to engage in prosumption, but not in audience participation.

Predictors of Prosumption Proclivity

RQ1 aimed to identify the demographic characteristics as predictors of prosumption proclivity. A multiple regression analysis was conducted to examine the weight of each predictor. Although both total news media exposure and production device ownership were significant predictors of prosumption proclivity in both resident and student samples, there were some substantial differences between the two samples. Demographic characteristics explained 23% of the variance in prosumption proclivity in resident sample (adjusted $R^2 = 0.23$) but only 8% in the student sample. As shown in Table 3, for the resident sample, education, household income, and picture-taking frequency were not statistically significant as predictors of prosumption proclivity. But age, gender, Internet experience were significant predictors of prosumption proclivity. The most significant predictor was age which negatively predicted the prosumption proclivity ($\beta = -0.34$, $p < 0.01$). In other words, the younger the respondents, the more likely they engaged in a variety of prosumption activities (higher prosumption proclivity). Respondents who were female ($\beta = 0.15$, $p < 0.01$) and had more Internet experience ($\beta = 0.13$, $p < 0.01$) were also more likely to have higher prosumption proclivity. In the student sample, gender and Internet experience were not significant predictors of prosumption proclivity. Only total news media exposure ($\beta = 0.24$, $p < 0.01$) and digital production resource ownership ($\beta = 0.12$, $p < 0.01$) were significant predictors of prosumption proclivity.

Distribution of Prosumer Types

RQ2 investigates the distribution of prosumer types along the high-low dimensions of production and consumption among consumers. We used the mean scores of production intensity and social media consumption as the cut off point for high and low for student and resident sample respectively. Using this method, we found a polarized trend of prosumption in different ways between residents and college students. But the distribution of each type was quite different. Among residents, consumers were mostly

Bystanders (58.9% of the sample) who seldomly used social media and never contributed any content (see Figure 1). But the majority of students were Contributors (36.2%, see Figure 2). The average production intensity and social media consumption scores of students were much higher than residents.

After identifying the four categories of Bystanders, Spectators/lurkers, Contributors, and Enthusiasts, we ran one-way ANOVAs to compare the demographic characteristics of each type of prosumers. We found statistically significant differences in several of the strong demographic predictors of prosumption proclivity, collaborating with the results of the earlier regression analysis. Specifically, in the resident sample, Enthusiasts were youngest in age and had most years of Internet experience. Bystanders were the oldest in age among the four groups and had the least Internet experience. Contributors, on the other hand, were the most frequent online shoppers among the four groups. Spectators were somewhere in the middle of those characteristics with no special pattern. In the student sample, we were only able to identify characteristics of the Enthusiasts who were frequent online shoppers, and actively engaged in the community as active members of non-profit organizations, church or religious groups and loyalty/discount programs and the heaviest users of news media.

Discussion

This study demonstrates the importance of content and production device ownership in predicting the likelihood of prosumption and further enhances the digital divide research by identifying the content and production device resources needed to participate effectively in social media prosumption. As long as content and production resources are not evenly distributed in society, not all voices will be heard. Those with production devices and content resources are likely to dominate in social media. This is different from the traditional conception of digital divide based on income and education level because income and education differences were insignificant among prosumer types among the general population. Those who are avid news media and online users will set the agenda in the social media world.

Prosumption is conducive to consumption of social media, as shown in the strong positive predictive power of prosumption proclivity on social media use across both general population and college students. The substantial number of Enthusiasts shows that many heavy consumers of social media are producing lots of content as well. Prosumption proclivity, in particular, is much stronger as a facilitator of consumption than participation or production intensity especially among college students. The non-significant effect of production intensity on social media consumption among college students may be due to the overall high level of production intensity across the students as shown in Table 1. However, significant production intensity effect on social media use among the general population means that social media should encourage production of content to increase their use. But a site which tries to maximize consumption or exposure time especially for college students should offer a variety of prosumption opportunities allowing consumers to post different contents such as comments, reviews, blogs, videos, and pictures rather than just one type of content.

The results of this study clearly show the polarization of prosumption in social media. Hence, the conceptualization of prosumption should be viewed as a continuum including both high and low production and consumption level of the audience. Rather than a blanket statement proclaiming that audiences have become prosumers/producers, it may be more appropriate to describe social media as a facilitator of prosumption. Their easy to use and common platform allows audiences to express themselves or publicize their views and knowledge.

The fact that younger people and those with the most Internet experience are Enthusiasts in prosumption is no surprise. As recent studies (Li, 2011; Malikhao & Servaes, 2011) show, people perceive strong social approval and peer acceptance in online contribution and social media use. College students, living outside their home and far from their high school friends, and in need of peer acceptance and friendship, can easily see social media as a good way to connect with old friends and new friends. Internet experience, product device ownership and content resource as significant predictors of prosumption also confirm the audience theory of the skilled audience who has the interest and resource to produce. Until Internet becomes ubiquitous and there is little gap in Internet skills, Internet experience will be an important factor that affects the audience's contribution to the Internet, or to social media sites more specifically.

The large number of Bystanders in the general population shows that not everyone embraces social media. Those who used it once in a while may be acted in response to a friend's invitation, but they themselves either were too busy or not interested in joining the discussion or sharing information. As most of them are older in age with little Internet experience, it will be interesting to see when this cohort is replaced by younger cohort who will age and the number of Bystanders may decrease over time. It is also notable that even among students; still 30.5% can be classified as Bystanders who have low social media consumption and content production. The differences between resident and student sample in distribution of prosumer types show that students in general are more likely to be active producers and consumers of social media than general population.

The prosumption proclivity, production intensity, and prosumption index which we proposed are some ways to measure the most common prosumption activities. They encompass the most common prosumption activities. But as technologies advances, there will be other type of activities that may need to be added in the future. Our conceptualization of prosumption as a spectrum allows variation in production and consumption level for future studies of social media or user-generated content.

Limitations of the Study and Suggestions for Future Research

The main drawback of the study is that it is only limited to a local sample in Northwest Ohio. Nonetheless, unlike most general surveys which have either general population only or college students only, this survey covered both types of populations and contrasted the differences in these two populations. The differences shown between college students and the general population in social media prosumption mean that researchers and policy-makers need to be careful in interpreting data using different populations on the subject. The findings of this study can serve as a reference for future studies for comparison and testing the measures. A national sample will help generalize the findings of this study.

Another problem in the study is that we did not ask respondents the specific reasons for not contributing content or using social media. Although prior research explaining willingness to contribute provided some clues to this, adding these reasons will increase the explanatory power of the social media consumption model. The fact that the low adjusted R square (0.08) in the prosumption proclivity of students and the lack of distinct demographic characteristics of Contributors in the student sample means that other factors can determine why they like to produce content but do not consume social media that much indicates such as personality and media production skills should be included in future research on the topic.

The prosumption behavior examined in this study was not site-specific and did not specifically compare text-oriented prosumption versus visual or video. We also did not measure the skill level of the audience in editing software. As we discussed earlier, text

prosumption is easier with much fewer resources needed than audio or video prosumption. Future studies can further develop the scope of prosumption behavior by including site comparisons and the impact of content format (e.g., video vs. text).

Table 1: Sample Profile

	<u>Resident Sample (n=281)</u>	<u>Student Sample (n=476)</u>	
Gender	Resident Sample (n=281)	Student Sample (n=476)	
Males	45%	39%	
Females	55%	61%	
	<u>Mean (SD)</u>	<u>Mean (SD)</u>	<u>t-value</u>
Age*	53.16 (16.1)	20.22 (35)	32.9
Social Media Use*	2.84 (6.83)	13.31 (13.68)	13.8
Household Income*	\$30,000-60,000	Under \$30,000	6.6
Prosumption Proclivity* (PROSP) (Range 0-11)	1.21 (1.7)	3.21 (2.22)	13.7
Production Intensity (PROI)*	0.21(2.89)	4.38 (6.24)	12.49
Prosumption Index (PROSI) ¹	0.50(2.24)	1.27 (9.77)	1.49
Content Resources (news media)*	11.25(11.4)	13.96 (13.0)	2.98
(pictures)*	0.56 (1.08)	1.56 (3.7)	5.21
Production Resources	2.60(1.12)	2.69 (.94)	1.01

*p < 0.01

¹Difference is not significant because of extremely high standard deviation among the student sample even after dropping the outliers.

Table 2: Prosumption, Participation and Social Media Use

	<u>Residents (n= 281)</u>			<u>Students (n=477)</u>		
	Beta	t	p	Beta	t	p
Prosumption	.40	8.36	<0.01	.70	15.98	< 0.01
Proclivity						
Production Intensity	.43	9.04	<0.01	-.02	-.70	n.s.
Participation Intensity	.00	.08	n.s.	-.02	-.45	n.s.
Adjusted R ²	.46			.46		

Table 3: Predictors of Prosumption Proclivity

	Resident Sample (n= 281)		Student Sample (n=477)	
	b	t	b	t
Content: News media exposure*	.13*	2.36	.24*	5.36
Content: Picture taking frequency	.08	1.5	.08	1.77
Media production resources	.16*	2.81	.12*	2.65
Age	-.34*	-6.04	-	
Gender	.15*	2.8	.03	57
Education	.03	-.48	-	
Income	-.03	.48	-.09	1.94
Internet Experience	.13*	2.2	.01	.16
Active member of political group	-.05	-.96	-.05	-1.1
Adjusted R square	.24		0.08	

*Significant difference at $p < 0.01$

Age and Education variables were not included in the student sample because of low variation.

Figure 1: Distribution of Respondents by Prosumer Types

(Resident Sample, n=281)

Production		Lo	Hi
Lo	Bystanders	Contributors	
	58.9%	15.4%	
Consumption	Oldest Age	Most frequent online	
	Least Internet Experience	shopper	
Hi	Non-active member of trade asso.		
	Spectators	Enthusiasts	
	2.1%	23.6%	
		Youngest Age	
		Most Internet Experience	
		Highest news media use	

Fig. 3.2

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