

Flash Mobs in the 21st Century: Mobile Technology Shapes Human Collective Behavior

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Abstract

The recent advances in integrating the cellular phone with two popular digital communication protocols, texting and social networking, have capitulated both the speed and scale of group formations. Consequently, societies worldwide have witnessed more unexpected group activities than those a decade ago. One such emerging group is flash mobs. The human collective behaviors of flash mobs worldwide have served a wide range of purposes, and can be divided into eight categories ranging from marketing to education. Some are constructive, while others are not. This paper uses the theoretical framework of Melucci's (1980) new social movement theory using empirical data gathered through an observation technique to develop a model which explains how flash mobs can be engineered i.e., what economic, social, demographic, and technological factors assist in initiating collective behavior as seen in flash mobs. Videos of flash mobs on art performances, political activism, business related activities, etc., in North America and Asia posted on YouTube were analyzed and geo-tagged over a period of time. The correlations between dependent variable, frequency of flash mobs or number of mobbers, and its proposed social, economic, demographic, and technological independent variables were examined to understand the basic factors behind the occurrence of collective behavior of flash mobs.

Keywords: flash mobs, mobile technology, collective human behavior, YouTube

Introduction

A vast amount of research exists on collective behavior and group formation. National and international events have heightened the awareness of social movements, riots, and protests, leading to pioneering research on different types of groups, their causes, and features. Further, the development of various theoretical and empirical contributions in the area of collective behavior has ensued (Lofang, 1993; Turner and Killian, 1957). The recent integration and popularity of mobile devices, cell phones, texting, and social networking sites such as Facebook and LinkedIn have further facilitated group formation (PEW Research Center, 2011, Srivastava, 2005). Such integration has led to unexpected and new types of group activities. One such contemporary social phenomenon is the "flash mob". Flash mobs can be described as groups of "well-wired folks who gather suddenly, perform some specific but innocuous act, then promptly scatter" (Grainge, 2011: 165). These sudden group activities are coordinated via websites and mobile phones. The objective of flash mob performances is to attract attention and make a public statement. Flash mobs make networks tangible and are a new expression of technological connectivity resulting in groups and collective behavior (Grainge, 2011).

Generally, flash mobs start with an email announcing the date and time of a respective gathering along with a set of instructions. The email is then forwarded by the recipients to others via computers and/or cellphones (generating a collective group). On average, flash mobs tend to last roughly around ten minutes (Wasik, 2006). Participants arrive at the designated site, perform their action (s) and disperse before the police arrive.

In the United States the term “flash mob” became widespread (in 2003) when introduced by Bill Wasik. Since then, many different types of flash mobs have been reported and studied (Kiitz, 2011; Hirsch, 2005; Barnes, 2006). Flash mobs have effectively created groups for a variety of purposes like marketing products and services, arts performances, political protests, crimes and education. These groups have managed to collectively stir and arouse public opinion, interest and attention.

What is the root cause of flash mobs? Can flash mobs be used as an effective tool to achieve its group’s purpose? Can a flash mob be designed and engineered to create a desired reproducible collective behavior? What are the contributing factors to the flash mobs?

This paper uses the theoretical framework of Melucci’s (1980) new social movement theory and empirical data-gathered through an observation technique. The researchers have developed a model which explains how flash mobs can be engineered i.e., what economic, social, demographic and technological factors assist in initiating collective behavior of flash mobs? Flash mob videos on art performances, political activism, and business related activities posted on YouTube (in North America and Asia) were analyzed and geo-tagged over a period of time. The correlations between dependent variable, frequency of flash mobs or number of mobbers and its proposed social, economic, demographic, and technological independent variables were scrutinized to understand the basic factors behind the occurrence of collective behavior of flash mobs.

The paper is divided into four sections. The first section traces the evolution and history of flash mobs as a collective behavior and group action to achieve a specific pre-determined purpose. Section two discusses the various elements of Melucci’s new social movement theory, including its relevance to understanding collective behavior of flash mobs. The third section provides a detailed and comprehensive investigation of the empirical data and the ensuing data analysis. The last and final section discusses, summarizes and concludes findings and suggests some options for future research.

Flash Mobs: A Flash Back in Time

Although not originally coined “flash mob,” the idea of using collective behavior for a predetermined purpose dates back to the 19th century. Collective behavior or “flash mobbing” was used in Tasmania, Austria—to describe the subculture of female prisoners. In America, an act of flash mobbing was noted sometime around 1958-- in a small, isolated building of northern New Jersey. A radio talk show host (a jazzman by the name of Jean Shepherd) used the WOR radio station mike to get word out to his listeners. People were asked to peep their heads out of their respective apartment windows; and at the stroke of midnight, they would all yell in unison, “Excelsior!” They would then retreat and quietly close their windows. Shepherd and other radio talk-show hosts like him were able to reach out and bring about a reaction among the people through voice, allowing listeners to engage in a physical activity (Fisher, 2003).

Even during Shepard’s “Excelsior,” the act of “flash mobbing” (or collective behavior) could be observed among truckers. They would send messages over their CB radios and meet up for lunch or chat in a certain location. The Citizens Band Radio was invented in 1945 by Al Gross and became quite popular in the 1960’s. CBer’s around the country even formed what was called CB clubs and coined special code language. The language consisted mostly of slang that would alert drivers of pending police jurisdiction and highway emergencies.

After obsolescent of the CB radio, pagers became the new fad. By 1980, there were around 3.2 million users. Although pagers had limited range and were used primarily in on-site situations, people still found the portable communication devices useful for scheduling mass meetings and wide-area messaging—also evident of collective behavior. By 1990, over 22 million pagers were in use (Bellis, Internet Ref).

CB truckers, pager users, and radio hosts were all participants (unknowingly) of the “flash mob” phenomenon. As time evolved, the widespread practice of flash mobbing remained sporadic as flash mobbing functioned on principles of on line activity (especially via e-commerce). The concept and practice of flash mobbing came into the limelight in 2003, at Macy’s department store in Manhattan. Prior to the summer of 2003, the store had successfully foiled several attempts at flash mobbing. (Eric, April 2012). Wasik created an e-mail called “the mob project” (i.e., themobproject@yahoo.com) and forwarded it to himself. As an experiment and/or to be cynical, Wasik decided to forward the e-mail to 50 friends. He was really just trying to be funny (Heaney, 2003) and had no idea that his e-mail would be forwarded to others which would result in 130 individuals coming to a certain spot at Macy’s, shopping for a “love rug.”

The “mob project” spiraled into a world-wide phenomenon with flash mobs occurring in various cities across the world. For example, in Rome, over 3000 flash mobbers invaded a music and bookstore in July of 2003. The flash mobbers spent a couple of minutes asking employees about nonexistent books before applauding and dispersing (Shmueli, 2003; Van Rijn, 2003). In Vancouver, Canada, 35 people met in August, of the same year at a major intersection and danced and twisted to shouts and counter shouts of “chubby” and “checker” (Grainge, 2011).

Flash mobbers generally connect through social-networking Web sites and text messaging; yet, they are strangers. They congregate at a prescribed public location, perform a dance or song (or other type of activity in unison), and disperse. Advancements in communication technology such as MySpace, Facebook, and Twitter have helped people around the world to easily organize flash mobs ([Flash Mob History](#): Internet Ref.). The likelihood of flash mob occurrences is constant, real, and inspirational to business and industry. They allow a fusion of culture, performance and new technologies. Flash mob activities extend, but are not limited, to pillow fights, dances, freezes, and political protests. Flash mobs operate as in-joke, outright protests, and television program plot lines. Most mobs are harmless and organized for positive causes. Yet, some mobs are colored with negativity, violence, and nuances of crime.

Business and Industry have recently turned to flash mobs as a means to draw crowds that result in new customers. Businesses are of the opinion that flash mobbers boost sales and enhance advertising and promotions (Burnett, 2012). Flash mobbing can also be a highly effective marketing tool to create brand awareness. Some companies are producing flash mob videos and posting the same on YouTube. For example, T-Mobile used a video in the UK that resulted in 46 million YouTube views (Adian, 2012). One lesson that companies can take from T-Mobile is that a well-organized and entertaining flash mob video has the potential to go viral, and such advertisement does not require a large budget. Well-planned and choreographed live flash mobs can effectively serve as a marketing tool to reach out to masses (Kanojia, 2013).

New Digital Social Movements

New Social Movement Theory (NSMT) is rooted in the continental European traditions of social theory and political philosophy (Larana, Johnston and Gusfield, 1994). NSMT considers how elements of politics, ideology, ethnicity, gender, and sexuality could define collective action and behaviors. NSMT is a compilation of several theories built on a few common themes. All new social movement approaches link collective action with cultural and demographic factors and not instrumental action in the state (Melucci, 1989). NSMT theorists emphasize the role of post material norms and values as opposed to only conflict for material resources (Melucci, 1989, Stoecker, 1995). These theories stress the importance of processes that promote autonomy and self-determination instead of strategies of power and control (Habermas, 1984; Rucht, 1988). They concentrate on constructing collective identities and group interests, instead of always assuming collective action is structurally determined (Melucci, 1989; Stoecker, 1995). These theories enable the generation of alternative traditions and explanations for collective behavior.

Four major theorists who have contributed towards the social movement typology are Manuel Castells, Alain Touraine, Alberto Melucci, and Jurgen Habermas. This study will use the ideologies and philosophies of Alberto Melucci to understand the collective behavior in flash mobs.

Melucci (1980) argued that the information age spiraled growth of new forms of social control conformity and information processing triggering new social movements. These movements developed to ensure protection of self identity, values, culture and spiritual membership. The new social movements operate via temporary networks rather than the historical structuration of society. According to Melucci (in Keane and Mier, 1989), social movements are a specific class of collective phenomena consisting of three aspects: solidarity, conflict and revolt against an incompatible society. Social movements are heterogeneous social constructions, a result of interactions between actors within a structured societal context. Melucci (1980) argues that social movements need to be deciphered and analyzed as processes which allow individuals to communicate, negotiate, produce meaning and make decisions as a collective group. These social movements are processes whereby collective identity is constructed. The concept of collective identity is emphasized i.e., the process of constructing an action system which is essential for formation of social movements. Collective identity can be interpreted as “WE of social action” (Peterson, 1989: 172), the process of formulating common goals, means and actions.

It is the formation of relationships between actors who communicate, negotiate and invest emotionally to identify themselves as a group; for instance, the collective identity created by the interactions of grassroots movements' activists (Melucci, 1980). Here, Melucci (1980) departs from the historical structuration of the society and its influence in formation of groups. Contemporary social movements are not concerned with struggles over the production and distribution of material goods and resources. Instead, they concern themselves with the ways and mechanisms through which complex societies generate information and communicate it amongst themselves. Information is generated and disseminated through technology to challenge the administrative logic of complex systems on symbolic grounds. Participation in the social movement is the end objective of each participant "Collective actors are nomads of the present" (Peterson, 1989: 172). All movements focus on the present, offering an alternative to existing organizational norms, forms and structures. Thirdly, social movements consist of "invisible" networks of small groups which suddenly appear publicly, as visible phenomena. Finally, all social movements emphasize the interdependence of the entire society and its actors (Peterson, 1989).

These contemporary social movements produce immediate outcomes. They instigate institutional change, bring about cultural innovation and produce new elites. Most importantly they challenge existing cultural codes and render exploitative power thereby making it accountable for its actions (Peterson, 1989).

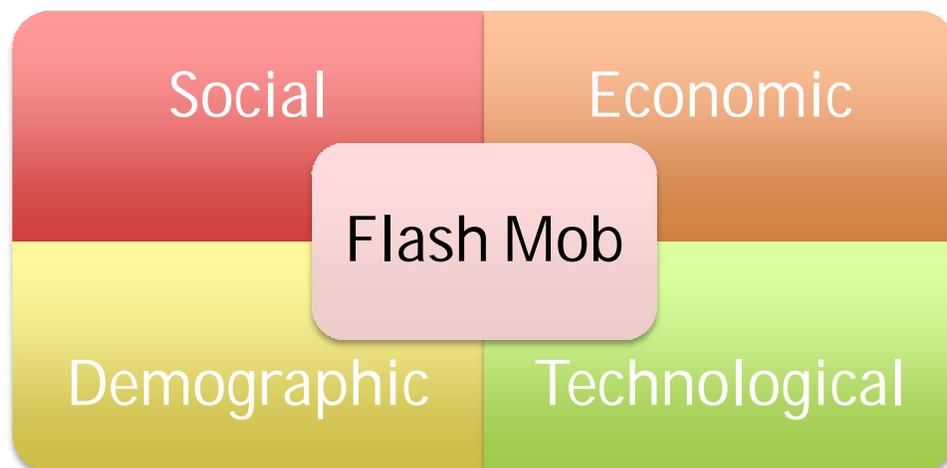
Melucci distinguishes between political action and social action (Kean and Mier, 1989). He argues that social movements construct social action (i.e., concerned with meaning of individual, interpersonal and collective life) and are embedded in the daily activities of civil society. These social movements mobilize individuals in order to question organizational, informational, and decision making networks and their functioning which raising public awareness. Social movement activists are "nomads of present" without a vision for any alternative societal order. They wander in the existing societal order questioning and arousing critical awareness of the inherent dilemmas of a complex society. The social changes initiated by these contemporary social movements are functionally necessary for the continued existence of the existing present day society. However, their explosive or transcendental power is non-existent (Peterson, 1989).

Melucci's philosophy is valuable in understanding the "WHY" of social movements. But this theoretical approach does not explain the "HOW" of social movement activity. Relatively little has been explained on "how" these movements come about. What factors or societal dimensions lead to this collective behavior? What do these individuals scattered in different locations, who collect together under a common code of membership have in common in terms of social, economic, technological, and demographic dimensions? This study makes a contribution towards Melucci's new social movement theoretical framework by providing this insight with help of empirical data gathered from Youtube videos of observations of flash mobs across North America and Asia.

Methodology and Empirical Analysis

Based on Melucci's theory, the authors identified four dimensions--social, economic, demographic and technological--as factors which could be responsible for the generation of flash mobs [see Figure 1].

Figure 1: Framework of Flash Mob: Social, Economic, Demographic, and Technological Dimensions



The authors systematically searched and observed YouTube videos that displayed flash mobs covering two geographically and culturally diverse countries of North America and Asia, in spring 2013. While observing these videos, we categorized these flash mobs into 8 categories (types): art performance, business, political, criminal, educational, charity, personal, and others. The number of mobbers of flash mob events was estimated by counting heads shown on the screen. The earliest flash-mob video we observed from YouTube could date as far back as 2003. Respective data, month/year of event, city/country, number of mobbers, and category of flash mobs, organizers, and source of data of flash mobs was recorded into a worksheet using Microsoft Excel. The countries' census information, such as population size, economic growth index, democracy index, GDP per head, secondary enrollment, possession of mobile phone, broadband subscribers, etc. were retrieved from the world bank database and the economist Intelligence Unit.

The authors developed seven hypotheses as shown below:

Table 1: Hypotheses of this Research

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- H1: The greater the population size, the higher frequency of Flash Mobs activities in Asia/North America.
 - H2: The higher GNI per capita, the more mobbers participate in Flash Mobs activities in Asia/North America.
 - H3: The higher possession rate of mobile phones, the higher frequency of Flash Mobs activities in Asia/North America.
 - H4: The more broadband subscribers, the higher frequency of Flash Mobs activities in Asia/North America.
 - H5: The more secondary enrollment, the more mobbers participate in Flash Mobs activities in Asia/North America.
 - H6: The higher democracy index, the higher frequency of Flash Mobs activities in Asia/North America.
 - H7: Business Type of Flash Mobs is more common in the high GDP countries in Asia/North America.
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Hundreds of pieces of data were collected from two regions, North America and Asia, which were examined to identify any missing information such as location or category, and to ensure the quality of data can be used in a canonical Pearson correlation analysis. Flash mob frequency and the number of mobbers were defined as dependent variables. The independent variables included country's population size (cp), GNI per capita (gni), secondary education enrollment (sed), number of mobile phones (prmp), number of subscribers of broadband (bb), and democracy index (di). Finally, a total of 97 pieces of data from North America and 100 pieces from Asia were used for data analysis. The authors performed a canonical Pearson correlation analysis using NCSS 2000 and/or the R statistical computing tools to see if there were any statistical relationships between the two sets of variables. The statistical significant correlations results are summarized in Table 2 as shown below:

Table 2: The Accepted Hypotheses and Their Correlations

Hypothesis	dependent variable (y)	Independent Variable (x)	Correlation Coefficient (c)	Probability Level (pblvl)	Dimension of Research Model
H1 (NA)	f	cp	0.906978	0.033578	Demographic
H2 (NA)	f	gni	0.921306	0.026185	Economic
H3 (NA)	f	prmp	0.924520	0.024609	Technology
H6 (Asia)	n	di	0.898268	0.038351	Social

Asia Region

The data set revealed that flash mobs in Asia had increased from 5 in 2009 to 42 in 2011. Among the five studied Asia countries [See Table 3], India had the highest number of mobbers, around 7433, who participated in 20 flash mobs at Mumbai. Turkey had the lowest number of mobbers, 2515, who participated in 20 flash mobs at Istanbul. The frequency of flash mobs and the number of mobbers who participated in these 100 flash mob activities in different categories are shown in Figures 2 and 3 below. There were 7759 mobbers that participated in 41 flash mobs in the Personal category. In contrast, there was only 1 occurrence of flash mobs in the Criminal category and the smallest number of participants—70 mobbers.

Table 3: Frequency of Flash Mobs and Number of Mobbers by Studied Country in Asia

Country	City	Frequency	No. of Mobbers
China	Shanghai	20	3025
Turkey	Istanbul	20	2515
Philippines	Manila	20	4695
India	Bombay	20	7433
Japan	Tokyo	20	2585

Figure 2: Frequency of Flash Mobs by Type in Asia

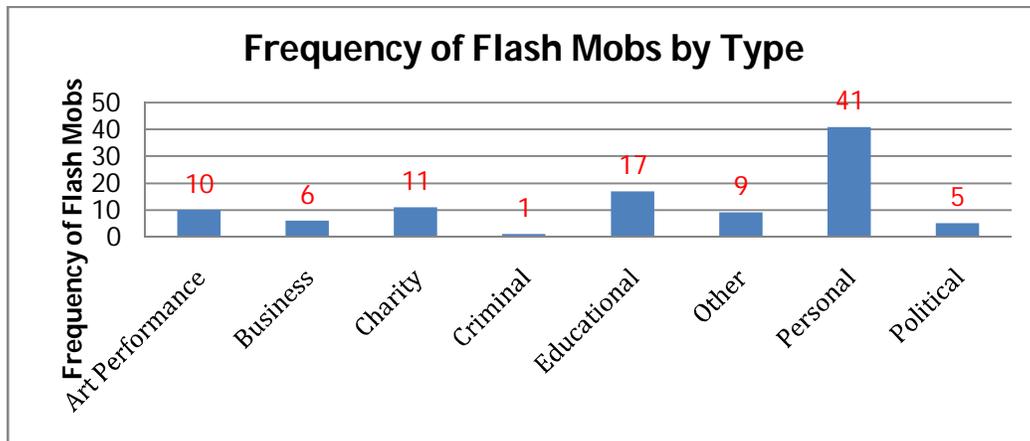
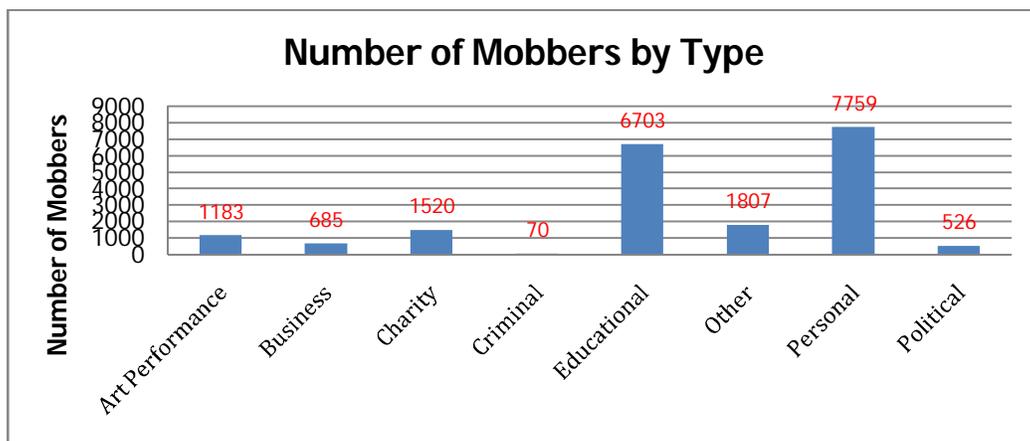


Figure 3: Number of Mobbers by Type in Asia



North America Region

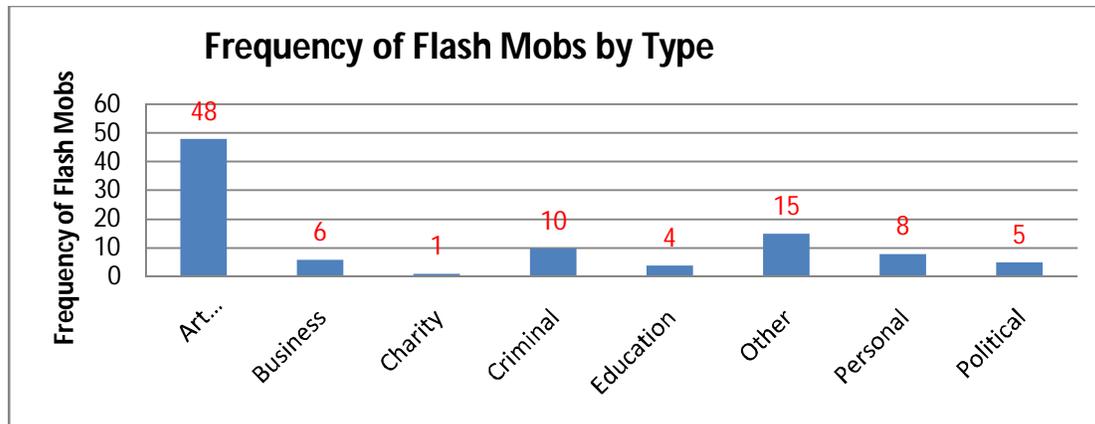
In the North American region, flash mobs had increased 3.6 times from 10 in 2008 to 36 in 2011. Among the five studied North America countries [see Table 3], the United States had the highest frequency of flash mobs events, 37 in total while Mexico had the highest number of mobbers, around 35776.

Table 4: Frequency of Flash Mobs and Number of Mobbers by Studied Country in North America

Country	City	Frequency	No. of Mobbers
Cuba	Havana	11	785
Canada	Toronto	21	3040
Dominican Republic	Santo Domingo	13	620
Mexico	Mexico City	15	35776
United States	New York City	37	4465

The frequency of flash mobs and the number of mobbers who participated in these 97 flash mob activities in different categories are shown in the Figure 4 below. There were 39,368 mobbers that participated in 48 flash mobs in the category of Art Performance. In contrast, there was only 1 occurrence of flash mobs in the Charity category and the smallest number of participants—50 mobbers.

Figure 4: Frequency of Flash Mobs by Type in North America



The empirical analysis provided the following insights about the factors responsible for effective culmination of flash mobs:

North America Region:

The empirical analysis revealed a significant correlation in the following:

- The less than 0.05 of probability level with 0.906978 of correlation coefficient revealed that the frequency of flash mobs is correlated to the country's population. Thus, results validated H1 that the high frequency of flash mob activity is a function of population size
- The less than 0.05 of probability level with 0.924520 of correlation coefficient indicate that a strong correlation between the frequency of flash mobs and country's possession rate of mobile phones. H3 is validated that greater the possession of mobile phones is directly related to a high frequency of flash mob activities.
- A 0.921306 of correlation coefficient with less than 0.05-probability level indicates that there is a strong positive relationship between the GNI per capita of the country and the frequency of flash mobs. Hence, the study shows validation for H2.

There are 650 mobbers that participated in six business types of flash mobs in the five studied countries in the region of North America, and 540 mobbers who attended four business type flash mobs in the United States which has the highest GDP among the five studied countries in North America. This data supports H7 that business type of Flash Mobs is more common in high GDP countries.

The empirical analysis failed to show a significant correlation between:

- The secondary enrollments of the country and the frequency of flash mobs (or number of mobbers). This result does not support H5.
- The number of broadband subscribers and the frequency of Flash Mobs activities invalidate H4.
- The democracy index and the frequency of Flash Mobs activities invalidate H6.

Asia Region

The less than 0.05 of probability level with 0.898268 of correlation coefficient revealed that the frequency of flash mobs is strongly correlated to the democracy index. This result validated H6 that a higher democracy index is a function of a high frequency of Flash Mobs activities.

There are 685 mobbers that participated in six business types of flash mobs in the five studied countries in Asia--400 mobbers who attended three business type flash mobs in Turkey and no business type flash mobs in Japan based on the preliminary data set. This data does not support H7 that business type of flash mobs are more common in the high GDP countries in Asia.

The empirical analysis in Asia failed to show a significant correlation between:

- a. The population size and the frequency of flash mob activities in the Asia region. This result does not support H1
- b. The GNI per capita of the country and the frequency of flash mobs (or number of mobbers). This result invalidates H2.
- c. The country's possession rate of mobile phones and the frequency of flash mob activities. This data invalidates H3.
- d. The size of fixed broadband subscribers and the frequency of flash mobs (or number of mobbers). This result does not support H4.
- e. The secondary enrollments of the country and the frequency of flash mobs (or number of mobbers). This data disputes H5.

Discussion and Conclusion

Undoubtedly, recent technological advances, cellular phones, texting, Facebook and other social networking sites have become an integral part of everyday life. Such advances have resulted in changes of people's networking, communicating, socializing and collaborating via modern technology. Technology has thus resulted in the creation of channels of collective behavior. One such collective human behavior is the group action of flash mobs. Flash mobs are a collective action where a group of strangers collect at a predetermined location at a specified time to perform an innocuous act and then quickly disperse. This entire performance is coordinated through cellphones and other similar technological tools.

In the past few years flash mobs have been effectively used as a business marketing tool. This paper in examining collective behavior as it relates to the various factors responsible for "marketing-tool success" through "flash mob" actions. The theoretical framework of Melucci's new social movement theory was used to ferret out the various facets of flash mobs as a collective action. Flash mobs can possibly be perceived as a contemporary social movement whereby all participants are contacted through technology to come together as a group. As a result, the respective group would perform an activity which shocks society, and seeks to demand undivided attention. Melucci's philosophy explains the "why" of social movements, but fails to dwell on the "how" of these movements. This paper makes a contribution by citing the "how" (i.e., possible dimensions) by which collective group behaviors are prevalent in flash mob activity.

The authors selected certain geographical regions in which to examine human collective behavior--as it relates to flash-mob activity. Such activity analyzed is based on social, economic, demographical, and technological effects. Data on flash mobs was collected from YouTube videos and used to identify correlations between flash mobs (frequency or number of mobbers) and its social, economical, demographic or technological influences. Data collection was limited to two regions: North America and Asia.

An analysis of the preliminary data revealed that in the North American region, countries with higher population and possession rate of mobile cellular phones resulted in more frequent flash-mob activities. Conversely, no significant correlation exists between the occurrences of flash mobs activity, and the possession rate of mobile cellular phones or population of the country in Asia. However, in Asia, the democracy index is correlated to number of mobbers (size of flash mob incident). The average number of mobbers (202) participated in 100 randomly selected flash mobs per incident in Asia is less than the average of mobbers (461) found in the 97 flash mobs in North America. Compare to North America, Asia has much higher population and hence the expected participants per incident should be higher. The lower than expected average participant per incident indicates in Asia may be due to more socially and economically controlled—which also influences the level of freedom enjoyed by people in Asia. Such freedom (or the lack thereof) could be attributed to the smaller size participants of flash-mob activity.

Hence, businesses and agencies which would like to utilize flash mobs (for publicity and marketing purposes) would need to be aware of the linkage between flash-mob activity and the country's democracy index in Asia.

In other words, democratic status had little or no influence in shaping North America collective behavior but the mobile technology does. For Asia, the level of the country's democratic status emerged as a key factor in shaping the collective behavior.

Thus, the results explained “how” collective behavior occurred (which tied into the NSMT theory) and raised further issues and concerns. By closely scrutinizing the validated hypotheses, it is possible to speculate “why” this collective behavior happened. Could culture be a major factor behind why people behave in a certain fashion? If so, to what extent did culture influence the occurrence of flash mob activity in North America and Asia? Would these same dimensions--social, economic, technological and demographical--be effective in understanding flash mobs in other parts of the world? What role would culture play in this collective behavior? This paper is still limited in its scope, there is a need to further expand this study with data from other parts of the world (i.e., Europe, Australia, South America and Africa).

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