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Discussing Future Role of Social Media on Construction and Project Management through Evaluation of Students Attitudes

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Abstract

It is an undeniable fact that information technologies have changed the classical business habits and brought different effects on various businesses in the last decade. Despite the slow progress of technological adaptation in construction industry, it seems that interest of youngsters, who will continue their professions in construction management field in the future; in using communication tools such as internet and social media will accelerate this period. Therefore, it is not difficult to predict that the construction sector entrepreneurs, who use information networks and social media platforms efficiently, will be able to reach their customers and targets more easily in the future and the companies which cannot integrate will be inevitably unsuccessful. The aim of this study is to discuss the role of social media on the construction and project management field through evaluating students' attitudes. With the results obtained in this study, a perspective on the attitudes of the new generation stakeholders who will work in the sector was obtained. By looking at these attitudes, innovative steps can be taken for the sector. Especially in the sector, which has a traditional perspective, the way of doing business can evolve in different ways and the integration of the new generation into the sector can be achieved

Keywords: Architecture, Engineering, Information Technologies, Social Media, Construction Project Management.

Öğrencilerin Tutumları Aracılığıyla Yapım ve Proje Yönetiminde Sosyal Medyanın Gelecekteki Rolünün Tartışılması

Öz

Son yıllarda bilişim teknolojilerinin geleneksel iş yapma alışkanlıklarını değiştirdiği ve her iş kolu için farklı etkiler getirdiği yadsınamaz bir gerçektir. İnşaat endüstrisi, teknolojiye uyum konusunda yavaş ilerlemesine rağmen, gelecekte bu iş kolunda mesleklerini sürdürecek gençlerin internet, sosyal medya gibi iletişim araçlarını kullanmaya yönelik istekleri bu süreci hızlandıracaktır. Dolayısıyla gelecekte bilişim ağlarını, sosyal medya platformlarını verimli bir şekilde kullanan inşaat sektörü girişimcilerinin, müşteri ve hedeflerine daha kolay ulaşabileceğini ve bu entegrasyonu sağlayamayan firmaların bir şekilde başarısız hale geleceğini tahmin etmek güç değildir. Bu çalışmanın sosyal medyanın inşaat ve proje yönetimindeki gelecekteki rolünün öğrencilerin tutumlarını değerlendirerek tartışmayı hedeflemektedir. Araştırma sonunda elde edilen bulgular, sektörde çalışacak yeni nesil paydaşların tutumlarına ilişkin bir bakış açısı sunmaktadır. Bu tutumlara bakılarak sektör için yenilikçi adımlar ve özellikle geleneksel bir bakış açısına sahip olan iş yapma yaklaşımının farklı şekillerde geliştirilebileceği ve yeni neslin sektöre entegrasyonu sağlanabileceği düşünülmektedir.

Anahtar Kelimeler: Mimarlık, Mühendislik, Bilişim Teknolojisi, Sosyal Medya, İnşaat Yapım Yönetimi.

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1. INTRODUCTION

With the development of internet and technology, business systems have been evolving and new models have been emerged. Nowadays, classical communication ways are replaced by new ones in the construction sector, as occurred in all professions. Business methods and required qualifications undergo considerable changes with the use of internet and information networks. Considering that Web 2.0 tools replacing Web 1.0, different disciplines and sectors interact efficiently with their customers. The most well-known tools among Web 2.0 technologies are Social Media (SM) platforms. Today there are lots of SM platforms that provide useful services for its users. Organizations of all kinds, including the construction industry, are beginning to adopt these new resources to better serve their communication needs and to parallel this concept of value added communication, social media also allows for potential improvements relative to knowledge management (Azhar et al., 2014). The construction sector in Turkey has made considerable progress in recent years and has to follow up the developments in the world economy (Vardar et al. 2016), but the sector lacks effective construction management and information technologies (Tekin et al. 2019). After the establishment of forums, blogs and web sites where technical information was shared, social media tools have also found their place in the construction industry in recent years. Although construction industry does not respond to technological adaptation quickly, attitudes of new generations towards use of internet and social media, are promising for the future of the industry. Despite the rapid integration of information technologies into other service sectors, the reason for the slowness in the construction industry is generally the reluctance of the stakeholders to use new technologies or the unwillingness to change the traditional business habits. With the effect of globalization and diversity of social media, the boundaries of the construction sector have changed today and a common has been created by following news and developments about the construction industry with extensive communication networks and publications. Researches show that social media usage rates of firms operating in the construction sector have increased from 40% to 100% in the last 5 years [9-11]. Today, lots of constructions stakeholders desire to know how social media can help them to reach the project goals such as cost, time and quality. The construction industry has been mostly traditional in its operation, although, it is fast changing and embracing new innovative information and communication technologies (Afolabi & Oyeyipo, 2017). In the literature, research on the relationship between the construction sector and social media is limited. Dönek et al. (2018) in their studies, evaluated of Facebook uses of construction companies in Konya from public relations perspective. Azhar et al. (2019) researched the integration of social media in day-to-day operations of construction firms. Adedeji et al. (2018) examined the use of social media marketing strategies by indigenous construction firms in Nigeria. Tang et al. (2017) investigated social media data analytics for the U.S. construction industry. Perere et al. (2015) presented a literature review of the role of social media in a business environment and its potential benefits, and explored a case study approach focusing on construction organisations (Perera et al., 2015). Grover et al. (2016) also assessed the usefulness of a BIM-based social platform for knowledge management in the construction industry. Pan et al. (2014), investigated the current patterns of social media adoption for marketing in the restoration industry and analysed the strategies used by those restoration companies that have adopted social media. Kürkçü et al. (2016), also examined social media and internet journalism usage habits of engineers. Construction and project management, one of the key sub-field of the construction industry, is utmost important for further development and survival of the industry in challenging economy. Since construction management mainly concerns with timing, budget planning, productivity, communication, purchasing, marketing and other relevant activities, innovative methods based on internet usage and social media platforms are of importance. BIM (Building Information Modelling) based project management mechanisms, software based methods in contract areas, decision support systems in resource planning, data mining applications etc. has always been integrated into the construction sector with the works carried out in this sub-field. The fact that young people who will find a place in the construction sector are intertwined with technology leads them to the construction project management sub-branch. Current students studying at different relevant departments will be employed in different management parts of construction sector. Their attitude towards internet and social media platforms will shape the future of construction management structure.

This study aims to investigate the role of social media on the construction and project management field through evaluating students' attitudes. Within the study, descriptive statistics and interview techniques were used to reveal the

social media attitudes and perceptions of students studying at relevant departments. In this paper; online and face to face questionnaires, following interviews were conducted to see the role and perception of the use of social media in the construction management. The results show that students use social media for professional information sharing as well as for entertainment purposes. The interviews at the end of the paper revealed that students have different demands and determinations on the social media about the construction project management profession.

2. MATERIALS AND METHODS

This study focuses on the role and purpose of social media in the construction management field by investigating relevant students' attitudes. The purpose of this research is to reveal how social media networks, which its effectiveness and importance are constantly increasing, are perceived by the target audience. In the research, descriptive statistics and interview techniques were used to reveal the social media attitudes and perceptions of students of relevant departments. Thus, various participants were determined by random sampling from students who have different levels of construction and project management qualifications. A questionnaire was conducted either face to face or via internet. Participants were asked questions such as internet and social media purposes, content to be shared on social media, which social media tool they use more. Survey questionnaires were sent to 562 students in Turkey and 354 of them participated in the survey. The statistics and results obtained are presented in tables. Afterwards, interviews were conducted with seven students to understand their perception and demands regarding the role of social media in the construction sector. This part was evaluated in the discussions section.

3. RESULTS

A total of 354 students participated in the research. When the gender distribution is analysed in Table.1, it can be seen that 59.6% of the participants are male and 40.4% are female.

Table 1. Gender Distribution of Participants

Gender	Frequency	%
Female	143	40.40
Male	211	59.60
Total	354	100

As far as internet usage purposes of the participants considered, most of the students use internet for research and follow the news. Total of both purposes constitute more than 30% of the whole. Detailed results are shown in Table-2 and Fig.1.

Table 2: Internet Usage Purposes of the Participants

Purpose of Internet Usage	Frequency	%
Research	68	19.21
News	45	12.71
Communication	37	10.73
Video	25	7.06
Downloading Files	27	7.63
Music	24	6.78
Playing Game	12	3.67
Reading Books	4	1.41
Social Media	109	30.79

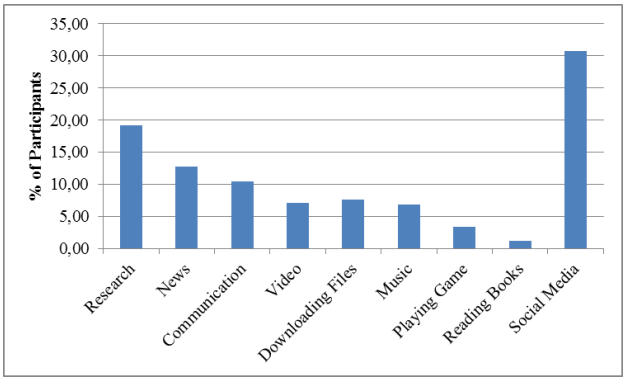

Fig.1: Internet Usage Purposes of the Participants

Considering the frequency of the participants using social media, the highest rate with 45.7% belongs to the participants who use 1-2 hours a day. This is followed by participants who use 2-4 hours a day. It is seen that almost all of the participants using social media use social media every day. At the same time, considering the duration of the participants' use of social media, the minimum rate with 1.8% belongs to the participants who use 3-4 days a week. The results are shown at Table 3.

Table 3. Frequency of Social Media Usage of Participants

	Frequency	%
0-1 hours in a day	75	21.18
1-2 hours in a day	36	10.16
2-4 hours in a day	162	45.76
>4 hours in a day	81	22.88

When the social media platforms used by the participants are researched, the highest rate belongs to Instagram with 57.62%. This is followed by Facebook with 19.2%, Twitter with 11.8% and YouTube with 8.7% as seen at Table.4.

Table 4. Social Media Platform Used Mostly by Participants

	Frequency	%
Instagram	204	57.62
Facebook	68	19.20
Twitter	42	11.86
Pinterest	31	8.75
YouTube	9	2.54

The content that the participants of the research want the most sharing on social media is professional fun sharing with 55.6%. Secondly, it was requested to share videos of construction projects with 16.9%. Looking at the results of the survey, it can be said that the participants attach importance to the visual content. 7.06% of the participants asked for the sharing of professional technical texts and videos about the construction software. The results obtained are shown at Table.5 and Fig.2.

Table 5. Types of content that the participants want to see the most on social media related to the construction industry

Mostly Asked Content	Frequency	%
Professional technical texts	25	7.06
Videos about construction projects	60	16.94
Professional fun posts	197	55.64
Tutorial videos of professional software	26	7.34
Pictures, videos etc. for application errors in construction projects.	46	12.99

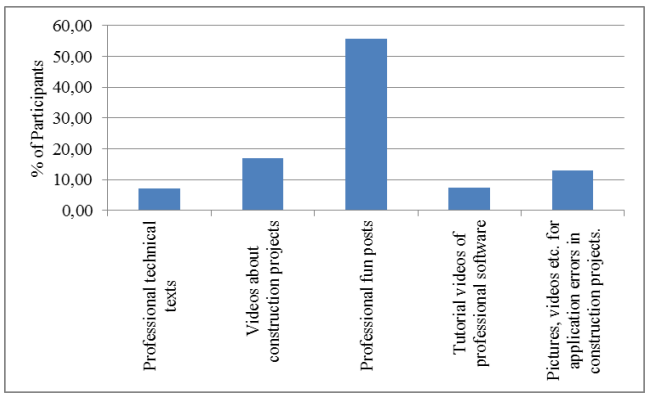

Fig. 2: Types of content that the participants want to see the most on social media related to the construction industry

Table 6. Purpose of Social Media Usage of the Participants

Purpose of Social Media Usage	Strongly disagree	Disagree	Incentive	Agree	Strongly agree	Mean	Standard Deviation
Academicals sharing (homework, projects etc.)	25	31	21	177	100	3.83	1.14
Communicate with friends	23	40	17	198	76	3.74	1.11
Share constructional knowledge	4	17	31	200	102	4.07	0.81
Follow outbreaks and news	15	21	0	260	58	3.92	0.87
Sharing photos	31	52	6	173	92	3.68	1.25
To be informed by current technologic developments	4	10	3	270	67	4.09	0.64
Being members of social groups	19	40	52	164	79	3.69	1.09
Exchange of interested ideas	21	62	63	135	73	3.50	1.17
Receive/Send messages	27	58	13	162	94	3.67	1.24
Join construction groups	4	12	7	264	67	4.06	0.67
Obtain construction news	6	17	10	252	69	4.02	0.75
Reach followed organizations	17	31	48	173	85	3.79	1.05
Making new friendships	69	114	100	52	19	2.54	1.12

Social media usage purposes of the participants were evaluated according to the Likert scale of 5. (1: strongly disagree, 2: disagree, 3: indecisive, 4: agree, 5: strongly agree). Accordingly, as it is seen at Table.6, the statement with the highest total frequency average is “I use social media to be aware of current developments”. Secondly, there is the expression “I use social media to access and share information”. The statement “I use social media to be a member of professional groups” comes third in the social media usage purposes of the participants. Apart from these, when looking at the distribution of social media usage, the statement "I use social media to make new friends" has the lowest average.

4. DISCUSSION

In order to discuss the findings, an interview study was conducted with those who were willing to provide detailed information about their demands and expectations regarding the study Totally, seven participants were involved in this section and their views are stated below.

Interview I:

In terms of construction management, the posts on social media are extremely valuable for both us (students) and our graduate colleagues. But since there is serious competition in the market, we encounter false, incomplete information and information pollution on social media.

Interview II:

In the past, there were platforms such as the chambers of architects and engineers where people could find, get to know each other and improve their network. However, today, thanks to the ease of access to social media, many engineers and architects can be easily informed thanks to the disciplines that they do not know by following each other easily. If we examine an example in this regard, when an architect follows a page about electrical engineering, he/she can learn a key connection scheme. In the same case, an engineer can easily achieve such a gain with a social media page in our lives. Another point is that people make speeches and live broadcasts on social media and share it with other engineering and architectural disciplines. Especially posts which combine information technology and construction techniques such as BIM (Building Information Modelling), virtual reality in buildings etc. are the most valuable for us.

Interview III:

The effect of social media in the spread of innovations is undeniable; it is really nice to reach a lot of people at the same time with new designs and new methods. But it seems difficult to attract other users outside the industry.

Interview IV:

I think the construction industry is not well advertised on social media. It is a fact that advertisements have no effect on sales as much as companies in other sectors. I think this is possible. Just like the car we see on the internet, the same can happen for buildings. I think we can achieve a good result if we develop the advertisements of our designs on customer-oriented social media channels. Of course, new methods and studies should also be exhibited. I think that the construction sector, one of the sectors with the widest network, should receive sufficient attention in social media.

Interview V:

It is necessary to have someone who will continuously communicate via social media and inform the followers with interesting posts. In fact, people with insufficient knowledge manage the accounts of many construction companies. The followers will appreciate the sharing about developments, news and technologies about the construction industry. Posts which are supported with videos and pictures will have an impact that will always increase the number of followers. Satisfying and positive answers should be written even in the negative comments made on the posts. If funny and humorous items are included, it will attract more attention.

Interview VI:

It is amazing that people from different cities and different age groups who would not normally come together would have the opportunity to work on a topic and create open calls on social media. We can share information with people we do not know in short-term works and in contests which are conducted at social media. The biggest deficiency in departments such as architecture and engineering is that the applied education is insufficient compared to the theoretical education in undergraduate education. We can fill this gap with social media. For example, an informative video of a long-term construction site is a very good opportunity for professional development. At the same time, we can analyse the usage data of social media and follow the trends in the construction industry along with the user history.

Interview VII:

We generally prefer practical information and sectorial humorous sharing as it has high interaction. However, the sharing of theoretical solution examples draws our attention. For professional information, we now prefer social media rather than internet, forums and blogs.

5. CONCLUSION

In order to discuss the findings, an interview study was conducted with those who were willing to provide detailed information about their demands and expectations regarding the study. Totally, seven participants were involved in this section and their views are stated below.

As in every sector, the construction industry

adapts to rapidly developing communication technology tools. The most important and popular tools are social media platforms. On the other hand, stakeholders in the construction industry increase their presence in these platforms day by day and interact in various ways. In this study; students who will be employed in construction management field, were the target group, since they are the most frequent users of social media, in order to highlight role and impact of social media in the construction sector by focusing on management sub-field. Through the surveys carried out in the study, it was understood that students use social media very effectively. It is observed that most of the students mainly use internet for either research or following the news. It is also seen that almost all of the participants follow social media every day. Considering the frequency of the participants using social media, the highest rate belongs to the participants who use 1-2 hours a day. This is followed by participants who use 2-4 hours a day. They are more willing to use social media in order to increase and share their professional knowledge and they prefer visual tutorial contents. In addition, visual content is very important for the respondents. Instagram and Facebook are the main social media platforms that the students follow. Considering types of content that the participants want to see the most on social media related to the construction industry, more than half of the survey participants preferred professional fun posts. Following the survey, an interview-based study was performed with seven students to focus on detailed expectations of students studying at relevant departments. Analysing the interviews, it is clearly understood that students use internet and follow social media very frequently and effectively. They desire to use social media in order to increase and share their professional knowledge. They also prefer visual tutorial contents. In addition, it is observed that social media is insufficient for construction management profession shares. The posts should contain more visual and advertising materials. As seen in every sector, the construction sector adapts to rapidly developing communication technology tools. Social media platforms will play much more important role on construction management since all activities based on communication will be carried out via such platforms. On the other hand, stakeholders in the construction industry increase their presence in these platforms day by day and interact in various ways. It should be emphasized that informative sharing about innovative construction technologies such as BIM (Building Information Modelling), Virtual Reality etc. should be encouraged. It is expected that platforms based on internet and social media will play crucial role on many construction management activities. It can be said that the contribution of such studies to the construction sector is quite high. Because although the use of information technologies in the construction sector is extremely limited, the need for it is too much. With the results obtained in this study, a perspective on the attitudes of the new generation stakeholders who will work in the sector was obtained. By looking at these attitudes, innovative steps can be taken for the sector. Especially in the sector, which has a traditional perspective, the way of doing business can evolve in different ways and the integration of the new generation into the sector can be achieved. It can also be said that the study tries to raise awareness of the importance of information technologies in the construction industry.

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