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The Echo Chamber Effect on Facebook: The Case of Armenia's Velvet Revolution

Master Thesis

at the Chair for Information Systems and Information Management
(Westfälische Wilhelms-Universität, Münster)

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Date of Submission: 2022-08-09

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Abbreviations

DQ	Deliberation Quality
e-Participation	Electronic Participation
e-Deliberation	Electronic Deliberation
IQ	Information Quality
PM	Prime Minister
SLR	Structured Literature Review
SNS	Social Network Sites

1 Introduction

As digital means of communication are getting increasingly popular among the public they are also growing as an essential platform for the expanded political discourse. Private platforms have already proven their contribution to the political debates during presidential elections, referendums and in our day-to-day communications. Be it Trump, Brexiteers or the local news, social media is being used by citizens of all social classes, age groups and, in the context of this thesis, politics (Francia 2018; Ott 2017).

With the rise of popularity of ICT-enabled networks, governments all over the world are now experimenting improved practices of good governance, be it engaging with their citizens, providing higher quality services, or becoming more transparent and responsive, the opportunities offered by new technologies are being utilized in governments for all the various enhancements. Here, the emerging field of e-Democracy promises to stimulate renewed engagement among citizens (Richardson and Emerson 2018, p. 1). The field of public participation follows a society-wide transitions as well, from passive consumption of information delivered by traditional media outlets to a horizontal world of ICT-enabled networks, where diverse yet interconnected individuals see themselves actively engaged in public discourse (Halpern and Gibbs 2012, p. 1159). Governments benefit from engaging with the public as they get access to a wider pool of potential solutions to the complex and rapidly changing problems of today's societies (Christensen 2012; Towne and Herbsleb 2012). Additionally, citizens feel empowered and accountable for their own governments, as they become an active contributor in the decision-making processes (Morgan and Shinn 2014). This shift has taken the form of a reassertion of democratic principles such as active citizen participation in the form of an authentic deliberative dialogue (Denhardt and Denhardt 2015, pp. 664-665).

As electronic participation (e-Participation) aims at motivating citizens to actively engage in decision-making processes, Social Media platforms also see a turn in getting more influential in the context of both, political and non-political topics (Teo et al., 2008). However, while enabling citizens to actively participate in public discourse, social media increasingly appears to undermine, rather than foster, political deliberation (Lindner and Aichholzer 2019, p. 19). The design choices of such platforms, inspired by profit-driven revenue models are often seen as gatekeepers that influence and amplify certain flows of information. This leads to the information filter bubbles, especially in political topics that result in so-called *echo chambers*, defined as online spaces where individuals are almost exclusively exposed to political and ideological expressions similar to their own (Bessi et

al. 2016, p. 4 -7; Margetts 2019, p. 108). As the citizens are being exposed to one-sided opinions, the discussions get more and more polarized which then fuels the isolation of online bubbles. When exposure to opposing views is restricted, individuals' ability to form a well-informed position is being strictly compromised. If individuals are deprived of access to a balanced set of arguments needed to develop a qualified opinion, this undermines their ability to deliberate thus, poses a real danger to democracy.

In response to the growing academic and practical research with contradicting views on whether such platforms can be an appropriate space for practicing balanced, high-quality deliberation on political and decision-making topics, the following thesis aims to carry out a thorough research to establish the influence of Facebook on the political discourse looking at a recent case study of the Velvet Revolution in Armenia that took place in 2018.

Thus, this paper aims to analytically explore and establish the role Facebook had played back in 2018 in facilitating the political discourse during the mass protests in Armenia foregoing the revolution. The research mainly focuses on the Facebook page of the leader of the protests, the '*face*' of the Velvet Revolution in Armenia, with an aim to evaluate the deliberative process that took place on the internet in the limited timeframe from March 31st to May 9th. The choice of this timeframe allows for insights into user activity in the complete period of the protests, from the beginning of the movement towards the end – the resignation of the ruling government.

The research is structured by firstly synthesizing the existing body of literature to contextualize two key concepts behind our research goal: e-Participation and deliberative democracy. The research is then positioned within a wider scope of theoretical framework while also accounting for various socio-psychological behavioral theories connected to the topic. These initial stages inform the research in designing ten hypotheses to be tested through the research. Further, for data collection and analysis several assessment mechanisms are implemented, including a model for evaluating Information Quality (IQ), Deliberation Quality (DQ), Engagement and Level of Polarization within Facebook discussions. A semi-quantitative coding method is developed in order to analyze a sample of Facebook posts users' contributions. This method entails evaluating each comment across two dimensions — the degree to which it qualifies as a contribution to the deliberative process, and the stance in the protests and revolution. The sample of the Facebook pages selected for the research also includes the most active page from the side of the ruling government back in 2018, as well as three

pages of media outlets reporting on the situation at that time. Decisions on inclusions and exclusions from the sample were partially informed by the two pilot exploratory interviews organized at early stages of the project, aiming to getting a better understanding on the state of affairs in the country at the given period as well as, generally, to providing some local context to the study.

With the established methodology of evaluating the quality of deliberation (DQ) on each pages analyzed, this work will be able to provide insights and draw conclusions on the conditions under which Facebook has landed itself in the context of political discourse in the case analyzed providing valuable insights and answer to the following research question: **“What role has Facebook played in facilitating online deliberative process in Armenia preceding its Velvet Revolution in 2018?”**

2 Literature Review

2.1 Method

With the aim to inform further sections of the research and to justify the choices for theoretical implications of the study an initial in-depth literature review was conducted.

Having in mind the nature of the topics this research is built on the review of the existing literature has been constructed by on the one hand getting the overall perspective of the field and on the other hand bringing down the focus to more specific aspects in the literature by limiting the scope according to the degree of relevance and the context. In other words, an ‘ad hoc’ approach to literature construction is how the review was initiated and on its later stages it was combined with a structured approach to scoping out narrow and specific literature on the topic.

Firstly, a traditional review aims to analyze general narrative around key concepts of the research and summarize the body of the literature on the topics around of e-democracy. After a formulation of general understanding on the conceptual terms, the second subsection carries on with a systematic analysis of e-Deliberation research. This decision to take on a systematic approach to reviewing and utilizing the previous research was made because of the diversity of encompassed sources in the literature and the ever-growing body of academic research on this topic. According to Denyer and Tranfield (2006), this approach is especially helpful when the concepts in the research go back in history and were heavily researched for decades. Thus, Tranfield and Denyer (2003) have highlighted the importance for scholarly and practitioner communities to develop processes and methodologies for bringing research evidence together in a structured and systematic manner.

This method aims to balance the traditional methods of reviews and the Structured Literature Review (SDL). The table below outlines principal characteristics of these two approaches following Petticrew’s (2001) summary and had served as a guiding reference for constructing the subsections of the literature review for this paper. The summary was later revised and updated by Petticrew and Roberts (2006) and is illustrated in Table 2.1 below.

	Systematic Literature Reviews	Traditional Literature Reviews
Deciding on review question	Researchers start with a clear question to be answered or hypothesis to be tested.	Researchers may also start with clear question to be answered, but they more often involve general discussion of subject with no stated hypothesis.
Searching for relevant studies	Researchers strive to locate all relevant published and unpublished studies to limit impact of publication and other biases.	Researchers do not usually attempt to locate all relevant literature.
Deciding on studies to be included and excluded from the scope	Researchers involve explicit description of what types of studies are to be included and what are the exclusion criteria for the other studies to limit selection bias on behalf of reviewer.	Researchers do not usually describe the reasoning behind the inclusion and exclusion of certain studies.
Assessing to quality of the studies	Research examines in a systematic manner the methods used in primary studies and investigates potential biases in those studies and sources of commonalities between study results.	Research does not necessarily consider differences in study methods or study quality when reviewing.
Synthesising study results	Researchers base their conclusions predominantly on those studies which are most methodologically sound and clear.	Researchers do not necessarily differentiate between methodologically sound and unsound studies.

Table 1 Traditional and Systematic Literature Review Methods

Table 2.1 Traditional and Systematic Literature Review Methods

In the successive subsections of the literature review the research is structured by transitioning from the broad contextual introduction to a more concrete and relevant discussion on the practices of e-Participation and e-Deliberation. After, a more specific topic is being unwrapped - the usage of Social Media platforms as an instrument and venue for social engagement and deliberation. The concept of deliberation is then systematically reviewed based on the existing literature to derive a comprehensive and complete definition of the term by following what is a systematic review described in the table. A separate subsection in the literature review focuses on Facebook as the most widely used Social Media platform and further sheds a light on historical social movements facilitated or fully 'hosted' by Facebook.

2.2 Conceptual Literature Review

2.2.1 e-Democracy and e-Participation

As the importance of human rights, equality, and social justice started experiencing an increased popularity among governments and societies, being often placed as topics for social discussion and debate, states around the world have begun to pay a great deal of attention to democracy: countries all over the world started to move towards more democratic practices (Huntington 1984). Both political figures and ordinary citizens started using various platforms to communicate with one another: share ideas, engage in discussions on burning social topics, gain knowledge on certain political figures and occurrences. (Rosema et al. 2011). Meanwhile, with the development of Internet tools and particularly with the emergence of social media platforms, democratic processes started shifting from traditional arenas to more innovative ones: concepts such as e-democracy (electronic democracy), e-government (electronic government), as well as e-participation (electronic participation) came to light.

From the 1990s, governments all over the world adopted a variety of initiatives that would provide people with an opportunity of using the Internet for the purpose of developing public services, which resulted in the Internet becoming an undeniable and essential tool in public administration (Spirakis et al. 2010, p. 76). By the end of the 1990s, the concept of democracy was on the agenda of more than 500 different scholars in the field of empirical research and normative theory who argued, for example, for liberal, transnational, associative, social, procedural, substantive, deliberative, global, emancipative, electoral, or inclusive forms of democracy (Collier and Levitsky 1997). As following terms were getting more prominent within the academia. And public administration, people all over the world realized the power of internet tools: it turned out that the internet and social media may not only be used for the purpose of building and maintaining relationships or staying connected with one's friends and family or learning about new cultures and lifestyles. These tools positioned themselves as an integral part of democratic processes, initiating discussions and protests on a variety of political and non-political processes, and, as a result, become a part of the overall decision-making process (Towne and Herbsleb 2012).

Although throughout the years Internet has gained a tremendous amount of popularity and became an undeniable part of people's social life, it is noteworthy that in the scope of democracy and participation in public, political, social-cultural life, electronic version of democracy and governance caused a huge amount of controversy, resulting in different scholars and academicians having different views and opinions regarding the credibility of Internet, Social Media, and the positive change that it may bring to the table in regards to democracy and governance (Towne and Herbsleb 2012, Janssen and Kies 2005, Moy and Gastil, 2006). The following section of this study aims at, first of all, understanding concepts such as e-democracy, e-participation, and e-government from the perspective of various scholars, and, consequently, examine up-to-date literature on pros and cons of the Internet and social media and their influence on democratic processes.

Spirakis et al. (2010), provide the reader with the definition as well as the overall concept of e-government. According to the authors, e-government is a perfect tool for allowing citizen participation and active involvement in dialogue with the public as well as decision-making processes, as well as promotion of the realization that people truly have the power to, through their participation, resolve critical topics from social to financial and legal issues (p. 77). As Spirakis et al. claim, electronic versions of democracy and governance have the overall power of affecting both ordinary citizens and public administration personnel, as well as the society as a whole (p. 77). According to Mofleh et al. (2009) electronic government can be defined as the process of transitioning both internal as well as external relations of public sector with the use of ICTs, resulting in the increase of the level of responsibility of public administration, increase of control and power exercised by the citizens, as well as the promotion of citizens' involvement in governmental processes.

According to ICPS (2003), e-government also gives an opportunity for citizens to have effective, instant, as well as low-cost access to public services, and increases citizens' access to any information regarding national budget as well as a variety of other governmental activities. Nowadays, citizens get an exceptional opportunity of receiving services and information in a matter of minutes, by just checking on their recent news feeds whereas, in the past, it would take more time and recourses for the information flows with printed media or daily news. Moreover, electronic means made the lives of civil servants easier as well: they are able to both perform their work as well as transmit information through e-devices and platforms as well. In terms of economic benefits as well, according to Khircu (2008), usage of electronic government leads to the decrease in the cost of information provision as well as a decline in the cost of interactive services

(Khircu, 2008). As a result, exaction of electronic government saves human resources as well as money, simultaneously providing information and services for 27/4 (Fairweather and Rogerson 2006), i.e. citizens may access forums, blogs, government social media pages and websites and get a digital version of any information of their interest. This flexibility is very beneficial for citizens willing to participate in political and non-political life of the community as it extends the available time to communicate with public services (Fairweather and Rogerson 2006).

In order to understand the overall image of electronic governance and people's participation in decision-making processes, we must, first of all, thoroughly analyze the concept of e-democracy. Electronic democracy sums up technological developments and innovations that allow improvement and further development of democratic institutions with or without the use of the internet (Spirakis et al. p. 80). It is a mechanism allowing citizens to actively participate in the decision-making process regarding public affairs (p.80). According to the authors, compared to e-democracy, traditional forms of democracy tend to limit the citizens' activity with voting practice exclusively. As the authors claim, however, voters do not feel truly satisfied with choices that traditional democracy brings, and, consequently, they do not consider it to provide them with the power of influencing political and non-political decision-making processes (p. 82). E-democracy causes change of behavior both in governments as well as citizens of countries (P. 82) It affects the manner that governments use to deliver information and services to their citizens, as well as the overall amount of responsibility that both governments and citizens carry in democratic processes (p. 82). Main advantages of promoting an e-democratic culture are the opportunity of citizens to engage in dialogue and discussion with the help of the Internet, resulting in ordinary people being more involved in public participation and other legislative processes (Hilton, 2006), meaning that citizens get an opportunity to transmit their opinion, interact between each other, and as a result create an open, and, in many cases, honest discussion on a variety of state-related topics (Dalton et al. 2001). Moreover, e-democracy has a potential of becoming a positive force for empowerment as it can make citizens more responsive to the global challenges and opportunities (Shinkai and Naito 2005). Citizens get an opportunity of being more informed and ready-to-solve public issues, whereas governments receive a chance of engaging in an effective communication with its citizens (Kolsaker et al. 2006). According to Wright (2006), there are four benefits that electronic democracy brings to citizens: (a) citizens receive more power as well as responsibility of raising their voice, expressing their opinion, and, a result, make a clear political choice, (b) local councils

have an opportunity to get an insight of citizens' opinions regarding a certain issue and represent citizens through ICTs, (c) citizens learn to hear out each other's opinions, engage in interesting discussions, and become more tolerant toward the opinions of one another. The most crucial objective of e-democracy is the transformation of traditional forms of democracy into a more transparent and open process of responding to desires and needs of the people (Chinn et al. 2007).

Taking into consideration all the benefits and opportunities that electronic governance and democracy bring to the table, a number of scholars also analyze other aspects affecting the overall popularity of e-democracy and e-participation: people all over the world have to have special equipment in order to participate in democratic processes through electronic means: from computers to other means of connectivity generally affect further spread of electronic participation and democracy. Not everyone has necessary financial and geographical abilities to electronically-participate in democratic processes (p. 83). This brings us to a whole new aspect of e-participation and e-democracy: the responsibility of the state to create as equal opportunities as possible for citizens to participate in decision-making processes.

According to "*Electronic Democracy: Recommendation and explanatory memorandum*" published by the Council of Europe (2009), while democracy is the most efficient, and, arguably the only form of government ensuring lasting solutions to various political, economic, social, as well as cultural problems throughout the world, it can be presented in different forms in various countries, depending on a variety of factors such as cultural, legal or constitutional traditions of each member state (p. 5). Through the legal document, however, the Council of Europe puts certain obligations on both states and citizens to follow in order to ensure smooth transmission from traditional forms of governance, participation, and democracy to more innovative ones. For instance, the document emphasizes the importance of the state's obligation in guaranteeing that its citizens' rights on privacy of personal data on the internet, as well as other human rights and fundamental freedoms shall not be violated in the process of exercising e-participation and e-democracy (p. 7). The document also mentions that e-democracy and e-participation shall be implemented in order to use ICTs for enhancing democratic processes, and, as a result, create necessary conditions for engagement as well as re-engagement of citizens in political and, overall, democratic processes (p. 7). Moreover, member states are obliged to make sure that e-democracy and participation are interlinked with traditional forms of governance, thus, one more time stressing the fact that electronic forms of participation and democracy are not a completely new thing: they are just a necessary and rather an

up-to-date continuation to the already-existing political and governmental structures and traditions. The document puts a very important obligation on states: they need to make sure that there is a high level of responsiveness as well as effective mechanisms of providing citizens with all the necessary information regarding a certain topic or issue. Here, the document gives yet another hint that the emergence of the Internet and ICTs are interlinked with democratic processes to provide citizens with an opportunity to access high-quality, accurate and up-to-date information while reducing costs and time spent on the overall processes. As the document mentions, e-democracy and e-participation are, above all, about democracy. Their main objective is the electronic support of further development and spread of democracy and citizens' participation in political processes as well as decision-making (p. 11). Also, the document pays attention to yet another important aspect as well as potential benefits of e-participation and electronic democracy: the attraction of young people to democratic processes. As COE article mentions, e-democracy can, with the help of technological development, make the younger generation more interested in democracy, democratic institutions, as well as processes (p. 12). Nowadays, the Internet may be viewed as an opportunity to connect governors and those being governed. (COE, 2009).

“Electronic Democracy: Recommendation and explanatory memorandum” also pays a separate attention to electronic participation of citizens in public and political affairs. According to the article, electronic participation (e-participation) is the support and further enhancement of democratic participation, where the civil society as well as businesses are engaged in creating both formal and informal agendas as a process of shaping and taking actions as well as making decisions (p. 13). The definition used by the UN for electronic participation is the following: “the process of engaging citizens through technological developments in policy as well as decision-making, and service design and delivery so as to make it participatory, inclusive and deliberative” (UN, 2014). The United Nations Department of Economic and Social Affairs (UNDESA), in its turn, highly supports the UN member states' efforts in promoting electronic governance initiatives and their implementation. Particularly, it facilitates the exchange of knowledge and experience by promoting policy dialogue for mainstreaming the use of information and communication technologies for development. Moreover, UNDESA has created a Global E-Government Readiness Index which is a tool that includes an e-participation index, assessing both the quality as well as usefulness of information and services provided by states for engaging its citizens in policy and decision making through the use of e-government initiatives (p. 38). According to the COE, electronic participation is an

important element of e-democracy. E-participation can empower people and give them various opportunities of being involved in democratic processes (p. 51).

Saebø et al. (2008) give the definition of electronic participation as social activity mediated by ICT that involves social interaction between citizens, public administration and politicians. As a sub-field of participation, e-participation is seen as necessary both for intrinsic as well as instrumental reasons. Intrinsic reasons are based on the idea that participation (both online and offline) is a desirable goal which contributes to inclusive societies both directly and through increased civic engagement (p. 4). Commonly, scholars use three-point scale to describe e-participation: providing information (government has an obligation of providing information regarding a certain topic through various stages of its development (can be a certain policy)); consultation (government consults citizens on policy or any other topic throughout the process of development); and decision making (government involved its citizen in the process of decision-making) (p. 5). In Europe at the beginning of the 21st century, electronic participation was seen as a way to reestablish trust of citizens toward public institutions, further expand their legitimacy, and make citizens be more engaged and, in some cases, re-engaged in political and non-political processes (Kalampokis et al. 2008). E-participation was perceived as an opportunity to fill in the democratic deficit in Europe as well as all over the world (p. 9). In the United States of America, for instance, the popularity of e-participation grew rapidly following the Barack Obama's Open Government Directive of 2009, which initiated targeted actions in both Federal and local levels to further develop and expand the use of e-participation features such as e-consultation, usage of social media tools and platforms. (Mossberger et al. 2013). On the other hand, in developing countries, e-participation expanded with lesser desire and speed. However, on average, it took less than a decade for certain countries to introduce their citizens to electronic participation platforms, and hand in hand with the development of e-government and e-democracy in general, e-participation also quickly started receiving major public approval (p. 10). Initially, high hopes were placed in the belief that further development and the emergence of the Internet would have a positive impact on the rise of popularity of electronic participations, and those hopes were talked about by both governments and field experts. A number of scholars argued that the features of the Internet would dramatically reduce the cost of citizens' participation in public affairs, and, by doing so, result in high levels of people's engagement in democratic processes (Mossberger et al. 2013). Indeed, the electronic forms of governance today offer a completely different model of interaction and communication between citizen and the governments.

Scholars vary in their definition of electronic participation forms as well. According to Vaccari et al., using online platforms for acquiring political information regarding a certain topic is a passive form of political participation (Vaccari et al. 2015, p. 225). As Morozov (2009) claims, liking and/or sharing a political post is only a matter of a few “clicks.” Called “clicktivism,” these are considered as a lazy form of participation. On the other hand, there are active categories of participation that demand more engagement and effort from citizens: according to the authors, examples of such actions are emailing a politician, joining a discussion or a political group, donating money for a certain cause (p. 225). Gibson et al. (2005), on the other hand, provide the following classification: all online actions, regardless of the amount of effort they require, shall be put under the index of “online political participation”. Instances of such actions may include signing up for an online newsletter, searching for a certain political information on the Internet, submitting a petition or commenting on recent legislative proposals via dedicated portals. Gibson and Cantijoch (2013) also claim that the emergence and further development of online forms of participation such as posting political content on social media or following the account of a politician has a potential of becoming a new mode of political participation. With the emergence and further expansion of social media, researchers became even more enthusiastic toward finding an all-inclusive description and definition for political participation. Not only Gibson et al., but also other researchers like Vissers and Stolle (2014) came up with a variety of measures of political participation through Facebook (for instance, joining a political group, writing a status, sharing an opinion, etc). Vaccari and his co-authors (2015), in their turn, examined the example of elections in Italy and how Twitter affected the outcome of the process, drawing more of a general image on how social media may cause a shift in the course of political actions. Other scholars like Theocharis (2015), while examining the definition and the description of what can and cannot be considered e-participation, argue that expressing political opinions on social media through, for instance, liking a certain thematic photo or a status update on Facebook is not enough to raise awareness, or what is more important, pressure a certain political solution for a problem (p. 8). The author comes to the conclusion that online “participation” can lead to various forms of political engagement which, as a result, lead a citizen to be engaged in true political participation.

Compared to traditional participation mechanisms, and tools, e-participation allows governments to both reach out to as well as receive various feedback from as many people as possible. For instance, creating consultations on certain policy drafts by making them available for comment on a public platform is a low-cost action compared to organizing

a face-to-face consultation with citizens. Therefore, in the scope of the same context, ICTs create beneficial opportunities for further connection between governments and their citizens (Saebø, Rose et al. 2008).

According to Saebø, Rose et al, from the beginning of the emergence of e-government, there has been a concern that digital technologies do not reach certain segments of the population, and digital services are not equally friendly to all groups in the population. Concerns about the digital divide based on availability of IT infrastructure (for example, Internet access or mobile access) have given way to a concept of multiple divides, which incorporate both availability and access concerns as well as issues of differential digital literacy and skills (see below). This is sometimes referred to as “e-inclusion” (p. 6). Electronic participation (e-participation, e-engagement) includes the citizens’ opportunity to be informed about current state of affairs, to have a chance of expressing their opinion, to participate in the decision-making process through means like voting, to create and bring to light questions, and to be involved in the political dialogue with the use of ICTs (Information and Communications Technology). According to Spirakis et al., electronic tools such as blogs or messages (e-mail, text messaging) are required for the e-participation achievement (p. 81). However, the e-participation and e-voting are based on the computer science and the associated software and depend on the citizens’ possibility for accessibility to electronic means and ICTs. Given that a part of the population, even small in developed countries, is yet characterized by poverty, illiteracy and low-level scientific culture it will be excluded by e-democracy (Chinn and Fairlie 2007).

In the case of e-participation, additional skills are necessary for citizens in order to make their voices heard and become a part of the decision-making process (Epstein et al., 2014). These abilities go well beyond the knowledge of how to simply enter the Internet or give a “like” to a post on Facebook. To truly be part of bringing tangible change to the table, people shall, in some sense, have specialized skills that would allow them to thoroughly analyze and give feedback to the information that they receive regarding a certain topic, an issue, or a legislative recommendation (p.16).

It is also noteworthy that electronic democracy, governance, and participation largely depend on citizens’ trust that their privacy and e-security will not be violated (Epstein et al., 2014). People all over the world have to not only believe in the government of their country, but have some sense of trust and belief in the Internet as a whole or e-participation platforms in the form of social media sites such as Facebook, Twitter (p.19). Constant reports were made in the recent years of instances where governments were

performing surveillance of citizens through the social media platforms they used (p.20). Thus, all these factors create yet another criteria that both governments as well as citizens shall follow as much as possible: right to privacy is one of the most undeniable parts of people's rights and freedoms enshrined with both human rights documents and Constitutions of individual states; governments shall do everything possible in their capacity to ensure its citizens right to privacy of data and its protection (COE, 2009), and, citizens in their turn shall carry the responsibility of being more careful with the information they share and provide through social media platforms. As Epstein et al (2014) mention, it is still hard to evaluate whether electronic participation is exercised in its full potential or not, and there is a need for thoroughly done studies regarding e-participation in developing countries (p. 24). This claim leads to a case of a developing country that is currently in the process of making electronic participation a more popular and accepted practice.

Thus, while it becomes clear how diverse can the impacts of the new technology be on the lives of people, ranging from passive to active forms of engaging with the government in different contexts, it is crucial to explore the topic in detail and be transparent about the benefits but also the threats that it can bring.

2.2.2 Deliberative e-Participation

As already explained in the methods of the literature review, this subsection aims to provide more clear structure and systematic understanding of the concept of deliberation within a wider field of e-Participation. In the following section a Systematic Literature Review (SLR) has been conducted based on Watson and Webster's (2002) approach for conducting a concept-centric review of the literature. This exercise is a key component to achieving the goal of the research and will later be included in the methodology for analyzing e-participation on Facebook during the Velvet Revolution in Armenia in 2018.

In the academic world the forms of deliberative democracy have been widely discussed (Chambers 1996; Dahlberg 2001; Escobar and Elstub 2019). The grounding for this study's conceptualization of deliberation is founded on Habermas's (1989) theories, providing concepts and for rational discourse and deliberation in the "public sphere". Many scholars have based their research grounding on the initial definitions provided by Habermas, as those were directly linked to the origins of democracy and freedom of speech (Chambers 1996; Dahlberg 2001; Friedland 2001). While conceptualizing and

defining deliberation most of the studies have met along the lines of explaining the concept as an interchange of rational and critical arguments among a group of individuals who are concerned by a common problem and whose key focus or topic of discussion is to come to a solution acceptable to all who have a stake in the issue” (Halpern and Gibbs 2012). When breaking down this definition one can spot and highlight already several key aspects of deliberation – (1) it is an *interchange*, meaning it has an open two (or more) sided exchange of thoughts; (2) there is a *common problem* or concern, meaning that the sides engaged in the exchange share the common concern and are not abstracted from the reality of the discussion; and (3) *acceptable solution to all* who have a stake in it, meaning the interchange aims at bringing the parties engaged to a common ground, which, of course, is not a solution acceptable to one side who would normally hold the power or the resources.

As clear as the theory is in writing, it is much more complicated in practice. Essentially there are numerous outside factors and variables that come to play when people get together to deliberate. These can be commercial interests of a single party, pushing for their opinion and investing in having a dominating advocacy or simply the unawareness of a potentially affected party to show up and express their views on a certain issue. Based on this notion of deliberation, the ideal of deliberative democracy has been formulated just as recently as in 1980 (Folami 2013), which is distinguished from representative and participatory types of democracies with one key respect: deliberative democracy is highly interactive, allowing participants to develop and modify their views as a result of their mutual interaction, leading to a better-informed understanding of the issue at stake (Christensen et al. 2019, p. 3).

As this research focuses on Armenian citizens engagement on Facebook throughout the Velvet Revolution it is crucial to first look into online deliberation and its characteristics that have been researched within the discipline. As already mentioned, this process in key for the methodological strategy in this paper thus a structured and systematic approach to reviewing the concept of deliberative participation was adopted. Following the description of a Systematic Literature Review (SLR) by Petticrew and Roberts (2006) placed earlier in the discussion and taking as a guidance from Watson and Webster (2002) on conducting a concept centric SLR firstly a literature review question was formulated as follows: ***What are the main attributes of a successful online deliberation?***

This question already helped to direct and focus the search of the literature. The keywords for the literature review of this section were *deliberation*, *e-deliberation* and *online*

deliberation and as very often deliberation was looked at in a wider context, the second round of addition to the keyword base included *e-participation*, *deliberative democracy* and the third round of complement of this list included the keywords *online discussion*, *online discourse* and *public discourse*. Those were the set of keywords commonly found in relevant papers. This initial search resulted in around 80 out of which 10 articles were eliminated right away based on the low level of citations, of course, accounting for the more recent ones that reasonably had less citations. The abstracts of 70 articles were scanned with a goal to cast down the number of studies to be reviewed to 30 articles, which was believed to be the feasible amount to process in a greater detail. The aim was to identify articles that were most likely to include more than one aspect of deliberation that could inform the review. This number included the articles with clear methodology and extensive literature review, the ones that explicitly looked at practices of high-quality deliberation both online and in few cases offline and the ones that were published in high-ranking journals.

After reading all 30 articles and noting down main characteristics mentioned by the scholars describing successful online deliberation the attributes were positioned into six groups. The table below summarizes the attributes mentioned by the scholars included in the review. Due to space limitations and potential confusion considering the big number of dimensions identified, the concepts that had strong resemblance in their definitions and were simply named differently were grouped together. The choice of the naming of each group with one specific attribute highlighted from the list is simply a judgement call and intends to simplify the dimensions by putting them into a single umbrella name. Some popular dimensions were not included in the table and were not considered in the scope of the literature review as there were rather technical and more applicable when analyzing technical features of online participatory platforms or voting sites.

Successful Deliberation Attributes	Literature
Identifiability (verifiability of the contributor, reputation of the contributor)	Halpern and Gibbs (2013); Scheufele, Nisbet, Brossard and Nisbet (2004); Verdiesen, Dignum, and van den Hoven (2018); Christensen (2020); Towne and Herbsleb (2012); Janssen and Kies (2005); Kennedy et al. (2019); Shin and Rask (2021), Del Valle et al (2020)
Discursive diversity (exposure to disagreement, diversity of opinions, plurality, inclusion, discursive equality, impartiality; group size, community engagement)	Halpern and Gibbs (2013); McLeod et al. (1999); Moy and Gastil (2006); Scheufele, Nisbet, Brossard and Nisbet (2004); Verdiesen, Dignum, and van den Hoven (2018); Fishkin (2009); Gudowsky and Bechtold (2013); Towne and Herbsleb (2012); Del Valle et al. (2020); Friess and Eilders (2015)

Reciprocity (interactivity, reciprocity, community, engagement)	Halpern and Gibbs (2013); Rafaeli and Sudweeks (1997); Wise, Hamman, and Thorson (2006); Dahlberg (2004); Fishkin (2009), Esau et al. (2017); Christensen (2020); Friess & Eilders (2015); Shin and Rask (2021); Friess, Ziegele and Heinbach (2020)
Reflexivity (common good reference, self-reflection, self-reporting, plurality, civility, respect)	Halpern and Gibbs (2013); McLeod et al. (1999) Moy and Gastil (2006); Rafaeli and Sudweeks (1997); Verdiesen, Dignum, and van den Hoven (2018); Dahlberg (2004); Towne and Herbsleb (2012); Friess and Eilders (2015); Del Valle et al. (2020)
Rationality (contribution quality, good reasoning of argument, argumentation, criticality)	Wise, Hamman, and Thorson (2006); Verdiesen, Dignum, and van den Hoven (2018); Dahlberg (2004); Fishkin (2009); Gudowsky and Bechtold (2013); Esau et al. (2017)
Information quality (availability of information, knowledge, quality of information)	McLeod et al. (1999); Moy and Gastil (2006); Rafaeli and Sudweeks (1997); Verdiesen, Dignum, and van den Hoven (2018); Fishkin (2009); Esau et al. (2017); Gudowsky and Bechtold (2013); Friess and Eilders (2015); Bobbio (2019); Kennedy et al. (2019); Del Valle et al (2020)

Table 2 Successful Deliberation Attributes

- *Identifiability*

When discussing the impacts of digital media on deliberation Halpern and Gibbs (2013) rise the issue of user privacy regarding identifiability and anonymity of their profiles. Several studies have concluded that the level of identifiability or anonymity of individual users on digital platforms is likely to influence the nature of their respective online deliberation (Shin and Rask 2021; Del Valle et al. 2020; Verdiesen et al. 2018; Christensen 2020).

Hereby, scholars have claimed that anonymity in the context of online media could reduce deliberation, due to a lack of social context cues, as interactions are separated and detached from the human consequences (Verdiensen et al. 2018; Christensen, 2021). Hence, this detachment can solicit uninhibited behavior, such as insulting or harassment of other users due to a lack of social judgement (Curlew 2019).

On the other hand, identifiability poses critical issues for online deliberation as well. In the context of online participatory platforms, the social desirability bias of users' needs to be accounted for. In social science, the social desirability bias is described as the tendency of respondents during a survey to answer what is perceived to be socially acceptable instead of answering truthfully. By fulfilling a social norm, respondents

try to avoid judgement for their actual opinion, thus distorting the results of surveys or polls (Grimm 2010, Klar et al. 2016).

- *Discursive Diversity*

Networked information access, exposure to diverse opinions (including opposing ones) or the level of interactions within and across different community groups were referred by number of scholars as catalysts for deliberation on social media platforms (Halpern and Gibbs 2013; Scheufele et al. 2004). There has reported to be a positive correlation between the size and diversity of the discussion group and the deliberative quality of the discussion (McLeod 1999; Moy and Gastil, 2006). In heterogeneous groups participants are more likely to confront with other members of the group and encounter opposing opinions (Moy and Gastil 2006).

Additionally, Discursive diversity should also come with a premise of inclusiveness, meaning the platform is open, accessible and in fact utilized by diverse layers of the society (Dahlberg 2004).

In contrast, the confirmation bias, which is described by people's temptation to the information and opinions that are coherent to their own and confirm what they want or believe is true compromises discursive diversity on the online platforms. When this happens naturally the discussions can become more polarized and result in what is called online echo-chambers as people would confirm and encourage their like-minded peers.

- *Reciprocity*

Another characteristic of a successful deliberation is high level of engagement to create high level of interactions and result in a collective learning process (Bächtiger and Pedrini 2010). This corresponds to what Esau et al. (2017) refer to as general and argumentative engagement within their dimension of reciprocity in the context of measuring deliberative quality of online forums. Repeated interactions with other users carry a social, bonding force, which not only increases the level of satisfaction for users when participating in the discussion, but also increases the quality and depth of conversations (Halpern and Gibbs 2013). In the case of Facebook this dimension is quite self-explanatory if we look at the feature of replying to a comment directly, rather than just posting in the general chain.

- *Reflexivity*

For a deliberative space to function successfully participants should engage in a reflexive thinking process before they voice their opinion. Reflection is happening at microlevel and is needed to process the information before forming thoughtful judgements, that “enables macrolevel deliberation” (McLeod et al. 1999). Arguably, not all online forum participants are in the habit of engaging in this type of processes withing their mind. The challenge here is to understand how to build a sense of self-awareness in public. This is a difficult task as there is no straight-forward way to find out or measure the amount of reflection a participant has undergone prior to writing something in the discussion (Dahlberg, 2004). However, it can be assumed that a person who is respectful towards the others even of their opinions do not meet on certain topics they would be open some level of reflexivity. Self-reflection can also be spotted if people change their opinions after intaking some arguments from the opposite side of the debate (Towne and Herbsleb 2012; Friess and Eilders 2015).

- *Rationality*

The dimension of rationality was often found within the reviewed articles as part of Reflexivity. Although these two very often come hand in hand we follow Esau et al. (2017) approach of differentiating between Reflexivity and Rationality. According to their measurement matrix rational contribution to a deliberative discourse should be relevant to the topic of the discussion and should have clear reasoning behind. The judgment behind treating this attribute as a separate independent block for a successful deliberation is firstly, it is easier to measure on online platforms as rational contribution is the comment itself posted on a platform, in contrast with the practice of reflexing which happens internally and usually cannot be spotted as already stated in the paragraph above.

Moreover, within this research there is a clear distinction in the methodology when it comes to measuring those two attributes. Reflexivity will be measured by the number of instances when a certain participant has shared the change of their views and attitudes after their engagement in the deliberation (Friess and Eilders 2015). Rationality will be measured by the quality of the unit of contribution to the discussion (Esau et al. 2017).

- *Information quality*

This dimension refers to the availability of a contextual high-quality information that has been made available in a rational and respectful manner. In order to form an unbiased opinions public should first of all have the access to information which is balanced, and fact based (McLeod et al. 1999; Moy and Gastil 2006; Rafaeli and Sudweeks 1997).

Some studies have implemented Information Quality (IQ) dimension as the first step in their methodology of measuring deliberation on the social media platforms. Mala and Cerna (2012) have reviewed existing literature formulating the basic criteria for establishing information quality, which generally converge around measures of accuracy, objectivity, currency, and coverage (pp. 91-92). Ramli et al. (2008) have also formulated an IQ criterion for evaluating blog posts on media outlets, which include understandability, completeness, cohesiveness, authority, or redundancy (p. 588). Later on, in the methodology of this research a refined IQ measurement matrix is used for evaluation the quality of the FB posts during the period of Velvet Revolution in Armenia.

To some up, the structured literature review with a piloting question of ‘What are the main attributes of a successful online deliberation?’ resulted in filtering out six attributes for deliberation on online spaces namely Identifiability, Discursive Diversity, Reciprocity, Reflexivity, Rationality, Information Quality. This breakdown of the six attributes of online deliberation is the backbone of the methodology for this research. The approach to implement SLR method to this section was curtail as is helped to narrow down the scope of literature significantly while still making sure to include key contributions to the academic debate. It is worth mentioning that some characteristics were left out of the review as they were deemed to be less relevant within the context of deliberation on the online platforms specifically. Some of these attributes were perceived impact, empowerment, power, voice, vote. Although these are indeed curtailed factors for a successful deliberation, there are less visible in the context of social media specifically as they rather focus on the tangible output of the deliberative process. Facebook does not have in its design a mechanism to collect and report to the decision-makers. It is however a space where people get engaged in discussions which can naturally contribute to forming their beliefs around specific topics, and historically even nudge them to act for or against the governments. Thus, the following section of the literature review explores historically

known and researched cases of when Facebook has facilitated and is believed to have amplified social movements.

2.2.3 Social Media-enabled e-Participation

The most widely used social media platform with two billion users, Facebook, has established itself as one of the most significant venues for online political participation (Margetts 2019, p. 108). Facebook undeniably plays its part in people's social lives where they are used to sharing personal moments of their lives, letting their friends into their preferences in music and movies, and, in recent years, also being vocal about their political views and opinions. Not only ordinary citizens, but politicians and other important political figures started paying a huge amount of attention to their Facebook accounts, making it a quick and an accessible way of connecting with their voters and citizens all over the country and people around the globe. Many researchers tried to analyze and understand the influence of social media on political occurrences and whether it shall be considered as a form of e-participation or not. According to Kaplan et al. (2010), social media is everything from blogs (i.e. Wikipedia), SNS (Social Networking Sites), or communities that heavily share content (for instance, YouTube). The authors define social media as a group of digital applications that consist of technological foundations, allowing a certain amount of exchange of user-generated content (p. 61).

Overall, e-participation encourages two-way communication and dialogue between the government and its citizens, increasing the ability of mutual learning (Phang et al. 2008). According to Khan et al. 2017, further use of social media platforms by government representatives is predicted to be favorable and helpful when it comes to e-participation. As the authors state, there are many countries all over the world that have paid a vast amount of attention to technological developments of the decade, using social media to engage citizens in everything government-related (p. 50). Italian city administrators, for instance, reportedly use Facebook to promote public communication and participation in democratic and decision-making processes (Agostino et al, 2016). And, in all of this, citizens are considered as the most important aspect of the overall process. They are the ones who have the ability to influence the government through various means and aspects. They can be the helping hand for the government to improve its services based on their feedback, resulting in the government being aware of certain occasions and nuances that

might slip from its view, making it possible for the leaders to execute their powers in a more effective manner (Linders 2012). The leadership may have the responsibility of making people's lives more comfortable and secure, but ordinary citizens may receive an opportunity to interfere and control overall processes.

Social media platforms are an important tool for politicians as well. Technological developments give officials an opportunity of networking with the citizens as well as ease up the process of information and opinion gathering (Margetts et al., 2011). Moreover, according to Charalabidis et al. (2014), the process of generating politically themed content on social media platforms such as Facebook would help governments to further develop and polish up their policies based on wants, needs, as well as opinions of its citizens. As Bower et al. claim, social media has the potential of supporting participatory governance, meaning that social media platforms such as Facebook are effective in the process of encouraging the society to get involved in political discourse. Moreover, the authors state that such technological developments not only fill in the bridge between the government and the citizens, but also enhance the conversation between citizens themselves, meaning that ordinary people also get an opportunity to share their thoughts and opinions regarding various subjects among one another (p. 58). Such interaction may result in increasing political interest and involvement of citizens in democratic and decision-making processes, causing the latter to be even more motivated to have their input in solving various issues and raising their voice regarding certain topics of their interest (p. 58).

On the other hand, Khan et al. argue that social media platforms such as Facebook are perceived as desirable platforms for political activists and various organizations interested in political discourse are seen to be preferred platforms for most activists or organizations (p. 59). In the context of people's participation in activities such as peaceful protests and marches, social media platforms are seen as a powerful tool for encouraging citizen participation in such actions (Enikolopov et al. 2020). Social media platforms like Facebook are heavily used by citizens for the purpose of spreading the word about such protests (p. 57), making the site an essential part in people's electronic participation in democratic processes.

Another important aspect that is highly influenced by the importance of social media platforms like Facebook is the level of benefit the overall process may cause on the government and its actions. When citizens get an opportunity to raise their voice on

certain issues and, thus, have their input in decision-making processes through social media platforms, governments get more responsive and feel a higher sense of accountability for their actions. As people get freer when it comes to writing an opinion regarding a certain politician or government institution, governments get more motivated to provide people with more information through social media platforms and keep their social presence at a higher level (Khan et al. 2017). E-participation, thus, has a full potential of enabling a higher sense of transparency by improving the country's leadership's responsiveness to what people feel and think about certain processes taking place in the state. Essentially, in case of being implemented to their fullest in terms of its potential, social media platforms like Facebook may help both governments and citizens by creating more engagement of the society in democratic processes, improving the quality of public services, establishing a high level of dialog, accountability, as well as responsiveness from the side of the government (p. 59). Based on the research carried out by Casteltrione (2016), many people perceive Facebook as being the main and the quickest source of any information, stressing out the fact that in our days, people are not even the ones who search for information, but rather the information finds people (p. 20). Moreover, the author highlights the outcome of his research in terms of how people tend to perceive Facebook. As one of the participants of his focus group mentioned, Facebook makes people more politically aware, and, as a result, people start feeling an urge of making other Facebook users more aware too by sharing their thoughts and opinions regarding certain issues and topics (p. 20). Interestingly enough, people also mention the fact that they find it important to have friends on Facebook who post political content, so that they can get an opportunity to know what is going on in the country as well (p. 21). In another research carried out by the author with politically active protestors of a young age, focus group participants stressed how Facebook has become a primary tool for the implementation of their strategy, creating a Facebook page being the very first thing the protestors did as a starting point for their political campaign (p. 25). The activists mention an important and comfortable feature of Facebook as the main reason why they choose it: it can be used both on mobile phones as well as on computers, being the cheapest means of communication with the world (p. 25).

Moreover, it is also noteworthy that Facebook users, especially the ones who are politically active, stress out the fact that their offline activity is highly dependent on what they are doing on Facebook, meaning that, their Facebook activity creates pre-conditions and becomes the basis for their offline actions, both political and non-political (Charalabidis et al., 2014). As an addition, people find it helpful that, due to the fact that

Facebook News Feed can provide people with new information they did not get to read before, it may cause those who are not politically active, receive regular political content through their News Feed and, as a result, make them become more interested in political topics, creating perfect pre-conditions for both electronic and offline participation in decision-making processes (p. 31).

As it was mentioned above in the literature review, receiving/searching for information regarding political and non-political topics on the Internet is considered as a form of electronic participation. In this sense, many scholars consider Facebook specifically as being a perfect source for people to get the information they need. As Alarabiat et al. (2022), people tend to consider Facebook as the most trustworthy digital means of receiving information from their governments and expressing their thoughts and opinions regarding the information received (p. 382).

An important social segment that is highly affected by e-participation and Facebook particularly, is the youth. According to research carried out by Tang (2013) on the connection between Facebook and its influence on young citizens' involvement in political processes, social media platforms like Facebook have a potential of heavily influencing and promoting young people's engagement in political processes. For instance, as the author mentions, in the scope of his research he found out that young people pay a huge amount of attention to having at least a few political figures and officials among their Facebook friends, making them more aware of certain political processes taking place in their country (p. 771). According to Abdu et al. (2017), young people are not interested in traditional media such as TV, radio, and they are more inclined to express their political participation through social media platforms such as Facebook, making it a more quick and cheap process overall (p. 2). As the authors argue, Facebook has brought a new hope and freshness to the process of connecting young people with politicians, as well as creating informative and meaningful public dialogue concerning various topics and issues (p. 2). Moreover, the fact of Facebook providing people with an opportunity of sharing instant information all over the platform increases the chances of young people being interested and further engaging in political processes (p. 3). Moreover, the platform not only provides ordinary citizens with a chance of receiving quick and instant pieces of information, but also causes politicians and political figures as well as government officials to keep the dynamic and be in constant touch with their voters and other citizens residing in the country (Abdu et al. 2017).

Besides a number of scholars believing that social media platforms create an opportunity for further enhancing e-participation of people in the decision-making processes, many others still perceive the benefit of Facebook skeptically. The common opinion brought up by various scholars is that social media platforms such as Facebook have not brought tangible or meaningful changes to the table yet (Katz and Halpern 2013). The argument is that using social media platforms and being active on such sites does not yet guarantee a real political participation and social engagement in important decision-making processes (Agostino and Arnaboldi 2016). In order to generate a politically important content, government and political figures, for instance, shall take into consideration and thoroughly evaluate what content is truly important and interesting for their readers, in order not to waste time and energy on generating social media materials that are not interesting for their voters and citizens and do not serve any specific purpose (p. 60). Some authors also stress the fact that being engaged on Facebook in terms of liking, sharing, or commenting on a certain post does not yet mean a true political involvement in processes. As Gordon et al. (2017) mention, citizens may leave a like or a comment under a specific Facebook post, but they might not actually talk about it in real life. As Casteltrione (2016) found out in his research, some people find Facebook to be useful in terms of communicating thoughts and ideas, not necessarily transforming the process into a real-life action (p. 25).

2.2.4 Online Social Movements and Facebook

Throughout human history, a number of revolutions such as, for instance, the French Revolution of 1789-1799 took place due to a number of issues from economic to political ones (Sydenham 1997). Through such movements, people were able to raise their voice regarding certain topics of their concern, and, with the development of online media technologies, revolutions evolved with a domino effect all over the world, from Tunisia to Egypt and later, in Libya. During those instances, social media networks such as Facebook, Twitter as well as the heavy usage of mobile phones started further spreading and having their unique influence on the overall processes and outcomes of those movements (Ray 2011).

Both the organizers as well as participants of those movements used social media platforms and technological developments of such forms to build networks, organize mass protests and demonstrations, as well as let the international community know what their country is going through (Ghannam 2011). As McAdam (2001) put it, Twitter does

not create revolutions, but revolutions are being tweeted. According to Porta et al. (2005), young people especially have a higher tendency of following what is going on both in their country and around the world through social media platforms, making those an undeniable tool for creating, organizing, and carrying out social movements.

One of the most prominent examples of how social media platforms could help formulate and carry out social movements and revolutions was the Arab Spring in Egypt. According to Blas et al. (2017), early attempts at overriding the existing government were unsuccessful due to the fact that the movement leadership did not have enough supporters on their side, however, alongside the rising popularity of social media platforms and the Internet in 2000s, the social movement started generating greater visibility, making more people both get interested and somehow participating in the overall process (p. 12).

In the scope of the movement, activists such as Ahmed Maher started heavily using social media platforms to spread the word on what was going on in Egypt in 2008. The activist put his main emphasis on Facebook specifically, and, as a result, at the beginning of his work of sharing the news with the world, as many as 160.000 bloggers started sharing pieces of information both on their Facebook pages and through other social media platforms as well (p. 12). Due to greater visibility, the news was spread all over the world, making the international community as well as media outlets being even more interested in the subject.

A turning point for the overall movement was the killing of an ordinary citizen, Khaled Said, brutally orchestrated by the police. As the news of his killing heavily and quickly spread all over social media platforms, in a short matter of time, the case became the overall symbol of the movement (Blas et al., 2017). A Facebook page called “We are All Khaled Said” was created on Facebook, (Baker 2011), bringing even more coverage and further spreading of the news all over social media platforms and the world in general. Both local Egyptians and people all over the world started having heavy concerns on whether similar things could happen to other Egyptians or any other person around the world, creating even more heated discussion and pre-conditions for further actions with the help of social media platforms (p. 13).

Another example of how social media platforms could help in forming and carrying out successful social movements happened in Ukraine in 2013. People of the country were unhappy with the ruling government’s decision to create closer ties with the Russian Federation instead of putting effort in joining the European Union. As a result, a number of online and offline protests were carried out. Social media platforms such as Facebook

especially were filled with information regarding the topic, providing Ukrainians with an opportunity of raising their voice regarding the topic and showing their disagreement with the government and the decisions that it was making (Onuch, 2015). In the scope of the Ukrainian uprising, research was carried out by Khomko (2015), indicating that, while answering questions about the events in Ukraine specifically and the role that social media platform played in the overall process, nearly 60% of those who participated in the research process believed that social media platforms highly influence the process of informing people, moreover, 51% holding a view that the Internet helps unite people. Nearly 40% of people who spoke in the scope of the research also held a view that social media platforms such as Facebook help in the process of organizing a revolution, and the Ukrainian revolution specifically, generally letting us assume that, overall, there is a great amount of people who truly believe in the power of social media platforms, perceiving it as an effective tool for raising their voices and influencing public and political affairs (pp. 64-65).

3 Research Background: The case of Armenia

3.1 E-Democracy and e-Participation in Armenia

As it was already noted by different scholars highlighted and quoted in the literature review above, there is still a limited amount of academic research carried out in developing countries regarding the overall condition in electronic forms of democracy and citizens, participation in political and non-political life of the country. One example of such under-researched country still in the process of exercising democratic practices is Armenia, the basis for the research that is going to be constructed throughout this paper. There is a highly limited amount of academically proven information regarding the state of e-Democracy, e-Governance, and e-Participation in Armenia.

According to the research carried out by Transparency International in Armenia (2022), generally, citizens get an opportunity to access the information they want to find out more about, however, there are frequent cases of incomplete or delayed responses to information inquires, lack of proper publication of information by public administration and local self-government bodies (p. 1). Moreover, the study stresses the fact that, overall, the public has no or limited awareness regarding e-participation channels available, as well as their motivation to participate is still at lower levels compared to other developing countries (p. 2). Transparency International also talks about the role of the National Assembly in Armenia: one of the most effective tools for creating a bridge and a proper connection between the public and legislative bodies and authorities. The promotion of participation of citizens in political affairs is carried out through various discussions, working groups, and several hearings carried out to give both parties (citizens and the government) an opportunity to have an exchange of thoughts, opinions, and concerns. While stressing strong sides of the overall participation promotion process, the report recommends regularly updating information provided online, as well as create tools for engaging vulnerable groups to the process, thus, highlighting the importance and the responsibility of the state to fulfill its responsibility of creating equal opportunities for its citizens for accessing every single information they are wishing to find out more about (COE 2009).

After the declaration of its independence, the Republic of Armenia entered a historical period of transforming to more of a democratic form of a society. In times of an economic collapse, extreme level of unemployment and mass poverty, the government of the Republic took a responsibility of coming up with quick and effective solutions in terms

of taking the country out of the blockade and, at the same time, creating preconditions for establishing a democratically driven society and form of governance.

In the scope of carrying out economic, social, as well as institutional reforms and taking into consideration the technological developments that were parallely happening in the world, the Armenian government, alongside more traditional forms of leadership, started paying attention to electronic governance as well. In 2011, the Republic of Armenia joined the Open Government Partnership, as a result, showing a willingness and taking upon a responsibility of creating all the needed conditions for transitioning into a more transparent and accountable form of public services (OGP, 2011). Moreover, in 2017, after signing a Comprehensive and Enhanced Partnership Agreement with the EU, Armenia took yet another step for strengthening democracy, ensuring the protection of human rights and fundamental freedoms, as well as the defense of the rule of law in the country (Armenia - EU CEPA, 2017).

In 2017, the Armenian government established the Digital Armenia Foundation (DAF), the main responsibility of which was to coordinate reforms in the sphere of digital service delivery. Moreover, the body was the facilitator of Electronic Governance Strategy. In 2019, as another step of showing Armenia's desire and readiness to further develop the sphere of electronic governance in the country, the World Congress on Information Technologies (WCIT) was organized and carried out in the capital of Armenia, Yerevan.

In 2018, Armenia experienced one of the most vivid turning points in its history that shall be further discussed in the scope of this research, that is, the Velvet Revolution. The overall process was concentrated on overruling the government and, as a result, creating a more democratically driven country and society in general, where people would be able to exercise both their rights and responsibilities in a more transparent manner.

After the success of the revolution, the newly appointed government came up with its own programme, the main aim of which was to create an atmosphere of democracy, accessibility, transparency, as well as accountability all over the country both for citizens and government institutions and individual actors.

While the old government had its programme for 2017-2022, the newly transitioned one came up with its own agenda, the main objective of which was to prepare the country for snap parliamentary elections based on criteria such as transparency, democracy, and rule of law (OECD, 2019).

Drawing back to the objective of this paper to systematically analyze the deliberative social-political discourse during the Velvet Revolution in Armenia in 2018, it can be expected that the scope of such analysis can be quite broad if it must cover all the aspects analyzed by scholars that we discussed above. Depending on the angle of the research it can explore how did the authorities use Facebook to connect to the public, or the power dynamics between the ruling government and the opposition in Facebook, or also interestingly it could look at the pre-revolution atmosphere comparing it to post-event state. Although all these angles are quite exciting and undoubtedly can yield potentially fruitful discussions if looked at, this research is limited in its scope and takes a specific angle of viewpoint which is the online deliberation of the public– primely connecting Velvet Revolution to the Armenian people.

3.2 Case Study: The Velvet Revolution in Armenia in 2018

In 2018, Armenia experienced a major shift in its political life, with opposition party leaders and members overruling the government and country's leadership in the process known as the "Velvet Revolution." In a matter of less than a month the opposition was able to consolidate the Armenian population into one, unified aim, that is, making the current government resign. The overall process that was highly discussed within and outside of Armenia, in some sense, took e-democracy and e-participation of the Armenian citizens to Facebook, as the main platform hosting the online communication on the ongoing protests. Both the revolution leaders and the participants actively used social media and other e-participation platforms in their fullest, with the purpose of letting as many people know about what is going on in the country as possible, resulting in, day-by-day, increase in the number of participants of the event.

On March 31st, 2018 oppositional party leader Nikol Pashinyan announced the beginning of the process through a Facebook live, and, in a short period of time was able to consolidate a tremendous proportion of the Armenian population, making people, in some sense, realize their power when it comes to choices and decision of political as well as non-political matters and events taking place in the country. Day-by-day, Pashinyan used his social media platforms such as Facebook and Instagram to be in touch with local citizens and, at the same time, with the Armenians living outside of the country. This in its turn, resulted in wider spread of the events throughout the world, making the process even faster than it was supposedly planned and desired. Famous Armenians living outside of the country such as Serj Tankian, Harout Pamboukchian, and Kim Kardashian in their

turn, used their Internet platforms to spread awareness of what is going on in the country, resulting in the news booming all over the world. E-platforms platforms such as Facebook, Instagram, Youtube, as well as Twitter were widely used throughout the whole process of the revolution.

Both Pashinyan and other members of the process heavily used and increased their social media presence, making platforms like Facebook and Instagram (mainly) their main source of keeping in touch with citizens. Leaders were announcing their upcoming plans (i.e. closing of streets, protests in certain locations, etc.) through a Facebook status or so, and people were being self-organized as quickly as possible, being at a needed location at the needed time, paralyzing the city, initiating mass protests all over the country. In a short period of time, Pashinyan himself was able to gain approximately 1million followers on Facebook alone, making it clear that people all over the country and abroad were waiting for his next move or an instruction of what to do next in the form of a live video or a status update.

Several Facebook posts that were shared during the period preceding the Velvet Revolution by the opposition leader Nikol Pashinyan, with the aim of understanding how the leaders managed to, in a short period of time, make their ideas go viral, collect as many people as possible for a democratic transition of power, and, all of this, by keeping a direct contact with citizens through social media platforms specifically.

The leader and his opponent political figures shared content on both Facebook as well as Instagram, showing the whole schedule of what the day will look like throughout the upcoming day, from early morning to night. For instance, the post would say: “12 PM-carrying out peaceful protests all over the country). This would mean that all those who wished to participate in the process would know exactly when to start acting, they knew for sure that starting from the hour mentioned in the post, the whole country would be in major “lockdown,” and, all of this, thanks to a single Facebook post that resulted in a major outbreak of information. To give a more detail explanation of how the overall process worked and how this specific form of e-participation resulted in people being motivated in participating in peaceful protests, let us have a detailed look on the layers of the society that were affected by such a simple post specifically and the level to which it went viral all over the Internet.

By letting people know about the plans for the upcoming day, the leaders used a soft power of making people realize the importance that their self-organization and self-initiation had in the overall process and the guarantee for its success. Few things worth

mentioning here are: by using social media platforms such as Facebook to communicate with people, revolution leaders also gave people an opportunity to use those platforms themselves to have their influence on the process. For instance, by making a Facebook post mentioning that at 12PM people all over the country should carry out peaceful protests such as closing streets, carrying out car-races, etc.

It is noteworthy that the overall process of the Velvet Revolution started with Nikol Pashinyan initiating a walking race from Gyumri (second largest city in Armenia) to Yerevan as a form of protest against the government and its actions. At the beginning, the leader had approximately 10 people that were involved in the Gyumri-Yerevan route, and this was when not only their walking, but Facebook race started, creating perfect conditions for people to, day-by-day, get involved in the process. Pashinyan and his, at the time, small team used social media platforms such as Facebook to make people feel like they are actually participating in the walking process by simply making regular Facebook posts and letting ordinary citizens know where they are in the route. From province to province, Pashinyan and his team regularly posted photos and status updates showing that they are in this or that province of Armenia and one step closer to their final route: Yerevan. By regularly posting, Pashinyan not only showed the progress they made in miles and kilometers, but also the number of people joining the team in the process. In Facebook posts with photos attached saying “We entered Lori province,” or “We are in Vanadzor already,” Pashinyan’s team truly gave people an opportunity to electronically-participate in a process that was destined to have a successful ending in terms of reaching their final goal and fulfilling ambitions. Starting from their casual clothes, one more time giving a perfect visual representation as well as a reminder that they are “ordinary citizens as well,” Pashinyan’s team members perfectly used the power of Facebook to motivate people to become a part of the movement, either by commenting or sharing the updates they posted on Facebook, or actually walking out on the street and having a physical participation in the process.

At the very beginning of the process people were already given an opportunity to know the whole route of the walk-race via Facebook post. Nikol Pashinyan and his team members shared a photo on all of their social media platforms, clearly showing what people shall expect, saying: “The movement will have the following route: Gyumri, Spitak, Vanadzor, Dilijan, Sevan, Hrazdan, Abovyan, Yerevan).” This move meant that at the very start the movement leaders showed the overall transparency of the process: using social media platforms to let people know as clearly as possible about their plans. Moreover, people were given a chance of not only getting information regarding what the

revolutionary leaders were going to do, but also, consider whether they are willing to join the team of “walkers” in this or that city on the way: a clear representation of how to use electronic platforms to a)transform information, b)keep in touch with citizens, c)promote participation by making the process as transparent and available as possible, d) using Facebook to, somehow, give a “vow” to citizens that they are not going to step back but rather “walk till the end,” putting people in a position of excitement and increasing their willingness to watch “what was going to happen next.”

Another example of making people not only participate but also feel a high sense of responsibility for the overall process of the Velvet Revolution by using social media platforms was the guideline posted by movement leaders on their pages. The idea of the post was to use social media platforms to inform people on what first aid necessities to have in order for the process to be as effective as possible. The list included mentioning such as dry food (clear form of calculation: not to have wet or greasy food in order for it not to be spoiled on the sun or in the rain), bottles of water, comfortable clothes, a hat (also indicating that they care about the participants not to be burned by sun), and every other thing necessary while being away from home and on the streets. Here as well the leaders did two things through their social media sites: showed that they care for the health and well-being of each and every participant and reminded people that they need to have their input in the process in order for it to be successful: they are the ones that need to create as comfortable conditions as possible in order for the movement to move forward. Moreover, the leaders came up with another guideline: list of actions to do and not to do while participating in the process. Instructions such as “keep the order,” or “keep the territory clean” were yet another example of using social media platforms to instruct people on how to keep the movement as organized as possible, minimizing the possibility of having unwanted incidents and occasions by, one more time, putting the responsibility of keeping order on the citizens themselves.

Another influential move that was constantly carried out by both the movement leader Nikol Pashinyan and his opponents was the usage of visual content on social media platforms to indicate the increasing as well as already-increased volumes of the participants. Just like in the case with writing a status update about the fact that one is going to be closing streets watching a drone photo of the crowd on the street that came together for a single purpose, has a high potential of promoting people’s participation and making them want to get involved in the process not to “miss out” from something important.

The breakthrough moment of the revolution was the ruling Prime Minister Sargsyan's statement on 23 April he resigned from the position of PM of Armenia. As he pointed out in this letter, "Nikol Pashinyan was right. I was wrong (...)." (Miarka and Łapaj-Kucharska 2019).

4 Theoretical Framework

The following section is a systematic formulation of the theoretical framework for this research. Firstly, the study is placed within the theoretical landscape according to the type of scientific contribution that it aims to bring. The section also builds on already well-established social theories in the context of online deliberation on Facebook.

Having a strong grounding in theory is crucial in the academic world as researchers are expected to develop existing theories by positioning their work within (MISQ 2004).

This is what sets researchers aside from practitioners or consultants. Theories are important as they allow the body of knowledge to be accumulated in a structured and systematic manner. To quote Lewin “Nothing is more practical than a good theory” (1945). First and foremost, it is essential to define the theoretical type of the research and understand where it should be positioned within the wider literature already existing in the domain. Thus, this section aims to identify and position this research within the relevant scientific landscape and shape the theoretical lenses through which preceding steps in the research will be constructed. This research examines the interrelated nature of technology and humankind, it not only looks at social media as a tool or facilitator of a discussion nor it looks at the human behavior in a vacuum. It investigates the phenomena when the two interact, so it concerns the social system paired with the opportunities that technological and information systems offer today. To make it more concrete, in the paragraphs below we look at the existing theory in the research field to identify the ‘right fit’ for this study based on its goals and the question it aims to answer.

For this purpose, Gregor (2006) has presented a taxonomy distinguishing different types of IS research and their goals. Shiley Gregor is a professor of Information Systems at the Australian National University, and an expert in the technical side of Information Systems (IS) as well as Social Science research who has been contributing to design and research advances for over two decades . In the paper, Gregor proposes a taxonomy distinguishing theory type by their goals. Given the interdisciplinarity inherent to the Information Science field (Lowry, Romans & Curtis, 2004), the taxonomy may help the researchers identify what contributions they can make to the IS theory. According to Gregor’s (2006) taxonomy we can define five types of theory in IS research: (1) Analysis, (2) Explanation, (3) Prediction, (4) Explanation and Prediction, and (5) Design and Action (p. 619).

- I. *Theory of Analyzing - Says what it is*
The theory provides a description of the phenomena of interest, it analyzes the relationships among those constructs, the degree of generalizability in constructs and relationships at times when applicable as well as the boundaries within which relationships, and observations hold.

- II. *Theory of Explanation - Says what is, how, why, when, and where (could also be labeled as Theory of Understanding)*
The theory aims to explain how, why and when did the phenomena occur by relying on the varying views and methods of causality and argumentation. This theory is usually intended to provide a greater understanding or insights by others into the phenomena of interest.

- III. *Prediction - Says what is and what will be.*
The theory states what will happen in the future if certain preconditions hold. The degree of certainty in the prediction is expected to be only approximate or probabilistic in these types of research.

- IV. *Explanation and prediction - Says what is, how, why, when, where, and what will be.*
Provides predictions and has both testable propositions and causal explanations.

- V. *Design and action - Says how to do something.*
Special case of prediction exists where the theory provides a description of the method or structure or both for the construction of an artifact (akin to a recipe). The provision of the recipe implies that the recipe, if acted upon, will cause an artifact of a certain type to come into being.

It is noteworthy that the different types of theory are not mutually exclusive, rather, they are interrelated. For example, the Analysis Type can be seen as necessary for the development of the other theory types (p. 630). Moreover, Gregor (2006) does not rank theory types but rather contends that all types can generate value (p. 631). It is relevant to point out also that as the theory types are constructed from general philosophy of

science and derived in reference to other fields of science, the taxonomy may be applied beyond the IS research field, ideally with the necessary adaptations made.

As the goal in this research is to look at the ways in which Facebook facilitated the Velvet Revolution in Armenia in 2018, we first of all need to adopt the Theory of Analyzing. In line with the definition described above this research is looking at a phenomenon that has not yet been thoroughly researched and analyzed by the academic world. It simply would not be possible, nor would it be reasonable to skip this basic yet fundamental step in the research. Although, as already highlighted in the literature review section above, historically there have been different social movements facilitated by social media that are in a well-researched state, this particular phenomenon was not addressed by the academia. These nuances already point out to the Theory of Analyzing as those are accepted to describe or classify specific dimensions or characteristics of a phenomena based on researchers' observations. Descriptive theories are needed when nothing or very little is known about the phenomenon in question (Fawcett and Downs 1986, p. 4). However, although Fawcett and Downs (1986) referred to this theory as descriptive, one should keep in mind that this theory goes beyond basic descriptive work as it analyzes or summarizes silent attributes of phenomena and their relationships. As McKelvey (1982) put it in his comprehensive coverage of taxonomies and classifications, with this type of studies the systematics and systematic analysis are crucial to achieve a high-quality scientific method and providing a clear delineation of the uniformities in certain phenomena.

In addition to an entirely compatible description of the first category of theoretical contribution, this paper also has an objective to further analyze and explain the tendencies that are identified through the research. In the first stage in the research the phenomena of the Velvet Revolution facilitated by Facebook will be outlined and descriptively analyzed which by itself is a theoretical contribution to knowledge. However, this paper also aims at explaining the phenomena in more detail and attempts to provide greater understanding of how things occurred the way they did and why they did. Here we should also look closer into the second category of Gregor's classification (2006) - the Theory of Explaining. As already briefly mentioned, these theories explain primarily how and why some phenomena occur. However, they do not have a primary concern to produce a testable and falsifiable prediction for the future, as that would already fall under the third category in the taxonomy. DiMaggio has plainly described these types of theories as enlightenment, where theory serves as an enlightenment, but not through conceptual clarity, rather by "startling the reader into satori" (1995, p. 391). The point of theory, in

this view, is not to generalize, as many generalizations are already widely known and rather blended. Instead, theory is a “surprise machine”, a set of assumptions aimed at clearing away conventional notions to make room for artful and exciting insights (DiMaggio 1995). There are several high-level theories in the field of social sciences that fall under this specific category. The structuration theory, which contributes to world understanding through the reciprocal relationship between action and social structure is part of this umbrella theory (Giddens 1984). Another closely interrelated theory is situated-action perspective, a model that contrasts a routine activity situated in an environment with theories of deliberative action (Agre 1995).

A more relatable and arguably relevant subtype of theory of explaining are most of the case studies in the literature. Case studies are commonly applied to explain at a lower and relatable level why and how things happened in some particular real-world situations. Here we come even closer to this research as it will be looking at a specific real-life case study, not necessarily with the aim to find and highlight commonalities with similar historical matters, but to identify exciting patterns within this specific case and attempt to explain those. This type of case studies approach has been categorized as part of the explaining theory (Yin 1994) but can also be other methods such as surveys, ethnographic, phenomenological, and hermeneutic approaches (Denzin and Lincoln 1994), and interpretive field studies (Klein and Myers 1999).

When it comes to the judgment and critical assessment of the contribution to knowledge with this type of theory, Klein and Myers (1999) argue that the findings, or the outputs need to be new and interesting, or they need to explain something that was poorly or imperfectly understood beforehand. With case studies, more than just a “story” is expected, it should be asked whether new or interesting insights are provided through the research, and also, not less importantly the contributions are subject of evaluation on the basis of plausibility, credibility, consistency, and transferability of the arguments made.

Next three theories in the classification - the Prediction Theory; the Prediction and Explanation Theory and the Design and Action Theory are not further discussed in the scope of this section as they are not applicable to this particular research. The following study does not provide an understanding of what will happen in the future in a similar set of conditions, nor will it design an artifact or a model to guide practitioners or decision-makers on how to do something. However, it is worth noting at this stage already that those model theories hold a great potential for the further research on more deliberative, democratic and safe online spaces for discussions and various social movements.

To summarize, in the paragraphs above we drilled-down Gregor's (2006) taxonomy of the theories in IS research to find the right theoretical fit for the purpose of this paper. This exercise is crucial to structure the following sections according to the attributes of the first two types of the classification theories - the Theory of Analyzing and the Theory of Explanation. In a more materialistic and 'down-to-earth' sense in terms of the contributions this paper aims at systematically analyzing what was the role that Facebook played in the deliberative democratic process in the context of the Velvet Revolution in 2018 in Armenia. Further in the research this paper also aims at unwrapping possible explanations on why and how certain things happened the way they did.

Now, with an extensive understanding of the theoretical contributions this paper aims to provide, and with the clear picture on what it does not provide we can move to the next stages of the research. In the following subsections several social theories on the intersection of human psychology, the design of social media platforms and online social behavior are looked at.

4.1 Group Socialization Theory

In order form a clear understanding about the behavioral patterns of citizens as well as government representatives when it comes to electronic participation through social media platforms, several theoretical frameworks were chosen to give the reader a better background on how various social theories may be implemented for the cases to be discussed in future chapters of this paper.

The first theory that will introduce some insights on the relationship of individuals and groups, on their socializing within a community and the dynamics of passing through an online social group is the group socialization theory. We look at this and all other following theories specifically in the context of online platforms, namely Facebook and the particularities of engagement within social, political, and decision-making processes.

First and foremost, it should be noted that the desire for interaction is accepted as given and natural, explained by human's extreme needs for belonging (Baumeister et al. 1995). As the authors argue, human beings are to be considered as communal animals that interact with one another in order to adjust to as well as overcome challenges. The desire mentioned above is something that every human being has, if abnormalities and exceptions are disregarded, resulting in people being inclined to forming social

attachments (p. 497). As Maslow (1943) mentions in the scope of his “hierarchy of needs,” as soon as people fulfill their basic needs in terms of psychological satisfaction and attaining safety, they turn to finding ways of stressing out and highlighting their social belongingness which may be managed through formation of groups (Hornsey et al. 2004; Hopper 2020).

Formation of groups in the society has a full potential of bringing benefits for both individuals and the public in general. When it comes to political participation and decision-making processes, it should be noted that available research illustrates that formation of groups increases the level of trust, motivates those interested in the process to further develop democratic values, as well as work on the expansion of their political skills (Brehm 1997; McFarland 2006). Moreover, the desire to belong in a certain group may also increase the motivation of individuals in political processes and, generally, being aware of particular issues and topics in order to truly become a part of a given group or a community.

The research carried out on the topic highlights that collective action is highly dependent on group identification as pinpointing develops group serving behavior (Zomeren et al. 2008). In this context, it should be noted that when it comes to electronic participation regarding political topics, both online and offline behaviors of citizens are highly interconnected (Feezel et al. 2009). In other words, online behavior of ordinary people has a huge amount of influence on the overall outcome of processes such as voting, elections, referendums and any other occurrences where decision-making is needed.

As it was already discussed in the literature review and shall be shown in future cases in the scope of this research, in today’s world, the process of the creation of groups on political and non-political topics takes place on social media platforms and the Internet in general. Social media platforms such as Facebook provide people with an opportunity to find like-minded people, join and create groups, thus, taking social interaction and formation of groups and public discourses to a whole new level of transparency, accessibility, and availability. To make people’s lives even easier, Facebook uses its special algorithms to both links potentially interconnected users together, as well as suggest new pages and groups to its users based on their interests, preferences, and general scope of activity on the platform (Facebook, 2020).

Another important aspect that is discussed by researchers in the scope of group socialization theory, is the behavioral patterns of those individuals who newly enter a certain group. According to Moreland and Levine (1998), whenever having to interact

with, for instance, a new group member, both the member as well as those who already identify themselves as an integral part of the group, will try to position themselves. As a result, new group members tend to be more initiative and active in the process, trying to receive validation from those who are already “confirmed” as a member of a certain community (pp. 300-304). Moreover, as Leonardelli et al. (2010) argue, new group members, in many cases, feel a need and a desire to show their loyalty and fitness to the group, as they feel not yet fully accepted by the members of the community (p. 81).

In the scope of group socialization theory when it comes to behavioral patterns of Facebook users, it can be assumed that in the process of fitting in the community, new group members feel a need to accept the opinions and views that most members hold in order to show their belongingness to the group and receive validation and acceptance. As a result, the overall process becomes a combination of social behaviors of social media users and the algorithms of the platform, entering its logical culmination in, so-called, echo chambers that shall be discussed in the next section of the research.

4.2 Echo Chambers

The idea of *‘echo chambers’* is connected to the process of consuming content and information on social media platforms in certain groups in which like-minded people exclusively get involved in a discussion, as a result, confirming their beliefs and views existing beforehand without questioning nor challenging them (Vicario et al. 2017).

As Grömping (2014) suggests, in echo-chambers, due to the fact that there is a lack of alternative and opposite views and opinions, there is no constructive and critical evaluation as well as reflection of the reality nor arguments, as the possibility of like-minded people opposing one another's ideas is quite low. Whether on social media platforms or in real life, being in constant surroundings of those holding similar beliefs, values, and opinions, puts one into a “bubble,” excluding the possibility of one to think critically. Group participants are more likely to absorb the views of the majority of group members, as a result, only “adding” to already-existing views and neglecting the “counter-reality” (Kull et al. 2003).

According to Brundigge (2010), compared to traditional information channels, the idea of echo chambers is even more relevant when it comes to social media platforms such as Facebook and Twitter. Even those users of social media platforms mentioned above who

are not interested in political affairs are extremely likely to get exposed to political information when even one of their friends on those sites share a piece connecting to politics, decision-making, or any other topic of their concern (Wojcieszak et al., 2009).

Another aspect of the effect of the echo chambers is connected to whether echo chamber members trust any other form of information outside their bubble or not. As the research illustrates, those individuals who are identifying themselves as members of certain group or a community, hold such belief systems and ideas that make them get filled with mistrust toward those individuals and ideas that are outside of their community (Jamieson et al., 2008). As the authors argue, echo chambers do a great deal of work in isolating their community members from those holding different points of views, making them enter an informational blockade (pp. 163-236). By inserting mistrust toward other sources of information, echo chambers make their members feel dependent on the internal community and the pieces of information that the chamber provides.

According to Jamieson et al. (2008) in some cases, those who identify themselves as members of a group or a community, do not always take full responsibility for their belief systems and opinions. As the author argues, there are circumstances that are out of one's control, making them get trapped in an echo chamber, for instance, when they are raised/born in the surroundings of a certain belief system (p. 4). As Niguyen claims, it is both hard for one to determine if they are trapped in an echo chamber or not, and, even in the case of full realization of the fact, it might be extremely hard for one to escape the chamber. The process may require a full reconsideration of one's relationship with their past and the belief systems and ideas that that past holds, which, in reality, is an extremely hard thing to do. Moreover, the author calls the overall process of trapping one in an echo chamber "a manipulation of trust," meaning that one is not just isolated from other sources of reality but are also left without an opportunity of facing other pieces of evidence, consideration, and argumentation (p. 12). Moreover, even in the case of being exposed to other, contradicting pieces of information, one will likely not feel any effect from it due to a heavy amount of pre-exposure to like-minded ideas, opinions, and beliefs.

4.3 Opinion Polarization

Another theory originating from early social psychology is *polarization*, which was a term used to describe the phenomenon of interacting groups *shifting collectively* toward

an extreme end of an opinion spectrum (Myers and Lamm 1976). Opinion polarization can produce both unrest at the societal level, and conflict in communications between people of opposing viewpoints. It has been argued that the highly emotional and often one-sided content on social media stimulates a polarized view of reality, which often exaggerates actual differences between opinion groups (Stroud 2010; Levendusky and Malhotra 2016). It can be thus assumed that high level of polarization is directly linked to emotional and exaggerated input rather than a rational or constructive one.

Polarization thus separates individuals into opposite sides and creates filter bubbles that have little or no communication with and understanding of each other. This can have a destructive effect to the functioning of communities and deliberative democracies in general. Referring to one of the six attributes of a successful deliberation, discursive diversity, and exposure to opposing views are necessary for participants of the discussions to practice open-mindedness and learn about the other side. serves as is crucial to. It is thus of critical importance to introduce measures for reducing polarization. Normally, this can be achieved by raising awareness and educating individuals about the different sides of an issue, with the goal of moderating extreme opinions and reaching a common ground.

As online platforms make it increasingly easier for people to interact around the issue of their interest users tend to create connections with like-minded individuals, by doing so they create echo-chambers that reinforce their existing opinions (Bakshy et al. 2015; Bessi et al. 2016). In such cases, instead of smoothing the differences, online social networks reinforce them, thus leading to increased polarization (Matakos et al. 2017). This process is a self-feeding loop that is difficult to break as naturally social instincts and biases seem to amplify it rather than smooth. Therefore, an external moderation of the issue and measurements to tackle it are necessary. Research on the topic of opinion polarization has come up with various indicators, indexes and measurements to analyze polarization scores on online forums (Van Der Eijk, 2001; Matakos et al. 2017; Mouw and Sobel, 2001). Some of the scholars have linked their studies to attempts of prediction societal conflicts between societal groups (Kusumi et al., 2017). However, an important issue to keep in mind especially when attempting to create predictive models is that social media very often exaggerates the reality and very often is an illusion not portraying the reality. In fact, there is other side of the research that shows that opinion polarization may be much less present than it is often assumed or expected (DiMaggio et al., 1996; Hoffmann and Miller, 1997).

4.4 Confirmation Bias

Another theory that is going to be discussed in the scope of this research is the theory of confirmation bias, that is, the tendency of individuals to search for and find pieces of information that both supports their already-existing beliefs and neglects the data that goes against those beliefs and opinions (Nickerson 1998). According to Mercier et al. (2017), confirmation bias makes people unable to correct their wrongdoings and mistakes, challenge their already-existing views, and, as a result, become overly confident that their opinions are true. Similarly, Steel (2018) argues that confirmation bias creates conditions for opinions and ideas becoming unjustifiably confident and supreme. As a result, confirmation bias leads to non-trustworthy and biased processing of any piece of information (Peters 2018).

The term confirmation bias, in many cases, refers to the process of beliefs, opinions, and expectations influencing the selection and evaluation of already-existing evidence (Hahn et al., 2014). As a result, scholars argue that people enter a mode of “wishful thinking,” experiencing an illusion that their views and opinions are overly-valid and true (p. 45).

On the other hand, Smart (2018) argues that, when it comes to groups and communities, each individual's confirmation bias may be beneficial for the group as a whole, where the members would carry out a more in-depth research and analysis of any given topic or issue. Myers et al. (1976), in their turn, claim that confirmation bias may be beneficial only in the case where group members hold a variety of points of views and actually share them with other members of the community. As the authors claim, if such a diversity does not occur, group polarization will arise, where opinions and views would be perceived without being challenged nor criticized, making the average opinion of the group regarding a certain topic or an issue appear to be more extreme and less trustworthy.

Another sphere where confirmation bias is heavily present is social media platforms such as Facebook, Twitter, etc. According to Arnott (2006), individuals tend to look for pieces of information on various social media platforms that further support their already-established views regarding certain topics, and, as a result, gain confidence in

trustworthiness and reliability of their opinions (Nikolov et al. 2019). As Itzhakov et al. (2018) conclude, social media users tend to search for and believe information shared on social media platforms that confirms their opinions, on the other hand, excluding and neglecting any other opinion that contradicts their points of views established beforehand (Kammerer et al., 2016).

Research Questions

Following the literature review and the theoretical framework discussed above this thesis will aim to answer following research question: **What role has Facebook played in facilitating online deliberative process in Armenia preceding its Velvet Revolution in 2018?** Under the umbrella of a relatively broad research questioned (RQ) this study will also address three related sub-questions:

Sub-question 1: What was the power dynamic on Facebook between the opposition and the ruling government preceding Armenia's Velvet Revolution?

Sub-question 2: How did the quality of information affect online deliberation on Facebook preceding Armenia's Velvet Revolution?

Sub-question 3: To what extend have social biases interfere with online deliberation on Facebook preceding Armenia's Velvet Revolution?

5 Methodology

As it was already outlined in the sections above, the aim of this research is to explore and analyze the ways in which Facebook facilitated social-political discourse in Armenia during its Velvet Revolution in 2018. The main research question and the three related sub-questions were formulated in the previous section to which follows the following section of methodological approach.

5.1 Pilot Interviews

To understand the overall state of affairs of e-participation in Armenia through social media platforms, and through Facebook specifically, two individual interviews were carried out. The interviews were conducted at a relatively early stage in the research and carried out an exploratory nature with an aim to get a 'rich picture' of the current e-participation setting in Armenia and to decide which aspect should be focused for the data collection and analysis. Both interviews were unstructured and followed a basic interview-guide with rather broad coverage of topics related to civic engagement in political discourse and decision-making. The guide served as a help in navigating through the process yet there was enough freedom for an in-depth conversation by following-up on cues in order to gain a comprehensive understanding of the current situation. The interviews aimed at creating a better understanding on the e-participation practices in the country involving both, the citizens, and the key political figures.

Both interviewees were journalists currently operating in Armenia with extensive career profiles in political journalism and are active on online, broadcast as well as print media in the country. It is also noteworthy, that, initially, the questionnaire was not in any way pointing out and highlighting Facebook as a platform, however, in both cases the interviewees naturally brought up Facebook rather early on through the interview which point to a conclusion that generally Armenians prefer Facebook as a main source of getting information from and engaging in discussions on the burning political topics. This assumption was later confirmed in the course of both interviews.

The topics discussed throughout the interviews included several umbrella topics guiding the conversation. Some general knowledge was provided about the topics of interest for this research which are summarized in the paragraphs below.

Decision-making processes and e-participation

According to the journalists the occasions for citizens to engage in the decision-making processes in Armenia are limited and not-so-popular among the public. Generally, they pointed out high level of political engagement and interest when it comes to getting informed and discussing the situation among friends and families, however the engagement seems to be rather low when it comes to the impact, contribution or even less so consultation and co-creation of policies and social services. Focusing on the e-participation platforms offered online, journalists expressed positive opinion on the overall direction of developing digital tools, however they had their doubts regarding the accessibility and inclusion of the platforms, especially for mobile users or elderly people.

e-Participation on Facebook

Conversations took a quick turn to the popularity of Social Media platforms that Armenians use in their interaction with the government and generally, as e-participation, sharing their thought, comments, and suggestions on their Facebook pages, while tagging the relevant ministries or public service providers. According to the journalists Facebook is the most effective, if not the only popular platform where people get an opportunity of exchanging knowledge, sharing thoughts and opinions. Facebook is believed to be the main platform for people to go to when seeking information or to provide feedback, pointing out to the “social pressure” on the side of the government when they receive feedback in a publicly open space, visible to a significant number of people.

The Armenian Government representatives' activity on Facebook

Interestingly, the current government of Armenia, the same government that was leading the Revolution in 2018 utilizes the resources of Facebook quite eagerly and effectively. According to one of the journalists this is also the reason why citizens are so engaged with the platform – the politicians ‘entertain’ citizens with regular Facebook live streaming, blog posts and photo reports of their outings. Journalists themselves find the most recent political announcements on Facebook pages, such examples surprisingly include official resignation letters, recent policy reforms and even updates on the ongoing border conflict and ceasefire negotiations. The design features of Facebook

were mentioned in regard to allowing extensive content to be shares and all other formats of engagement, unlike Twitter that puts a limit on the number of characters one can share.

Both journalists mentioned particularly three cases in the recent years when Facebook was the main facilitator of the communication between the government and the public: The Velvet Revolution in 2018, the 2020 war in Nagorno-Karabakh and COVID-19 outbreak in 2020. Apparently during these events Government was exclusively present on Facebook,

Executing pilot interviews helped to form a general understanding of current e-participation trends in Armenia and, overall, contextually informed the research. Some of the insights were helpful to reinstate the choice of the case study and navigate through further methodology for the thesis. Particularly, some practical information was gathered about the timeline of the events during the revolution, guiding the methodology to the Facebook pages and people's profiles needed to be considered. The interviews were also helpful in mapping down some local media outlets that could further inform the research in the stages of data gathering and analysis. Interestingly, some of the social theories considered in this research were indirectly referred to through more practical examples of online discourses that interviewees had observed. Most importantly the knowledge from the interviews served as an aid and inspiration for some of the hypothesis formulated in the next section.

5.2 Hypothesis

The methodology of this research was fully structured only after two exploratory interviews conducted with journalists. By the end of the following section 12 hypotheses were formulated based on the research background describing the selected case study, including the two pilot interviews that were initiated at an early stage in research and carried a purpose to navigating through the local reality. The hypotheses were also heavily grounded on the theoretical framework of the study including socio-psychological theories discussed in dept in the context of online engagement and deliberation. The research was based on testing those hypotheses on the extent of their validity by looking into pre-selected Facebook accounts, the posts on those respective accounts and the discussions on those posts in the comments sections. Only a limited

timeframe between March 31st to May 9th was considered, the period of protests preceding the Velvet Revolution.

Following subsection briefly introduces and outlines the Hypotheses derived for the analysis of the case study. Based on the discussion on the existing echo-chambers on online platforms and the consequences those have on people getting more polarized in their views it is necessary to look for a potential filter bubbles on Facebook. According to the interviews conducted earlier on in the research, the online political discussion around the side of the opposition leading the movement supporting Velvet Revolution was way more substantial and sizable compared to the one of at that time the ruling government. This overweight in campaign and information that has been posted online could, according to the theory of echo-chambers and polarization lead to more mainstreamed flow of arguments and thus, one-sided online representation on the reality. Therefore, the first hypothesis is formulated as:

- ***Hypothesis 1 (H1): The opposition supporting Velvet Revolution was more vocal on Facebook compared to the other side which led to formation of a dominating echo-chamber.***

One of the key attributes for a successful deliberation is the high-quality information (IQ) that people consume before and while engaging in deliberation. According to the analysis in the SLR of this research, scholars have established that in public needs to be exposed to a balanced, objective, and fact-based information to form impartial opinions and, therefore be able to rationally contribute to the discussion (McLeod et al. 1999; Rafaeli and Sudweeks 1997, Moy and Gastil 2006;).

Through the interviews, there was an impression made that Facebook posts of Nikol Pashinyan, at times the opposition leader, were often rather short and oriented towards people's emotions, calling and encouraging them to act quickly. It could be insightful to have a deeper look on the content and information provided by the two main sides of the movement, by comparing the Facebook pages of the two sides of revolution. This resulted in formation of another two hypothesis.

- ***Hypothesis 2 (H2): Posts of the opposition party leader Nikol Pashinyan were lacking information quality, compared to the ones of the ruling government.***
- ***Hypothesis 3 (H3): Posts of the opposition leader Nikol Pashinyan were mainstreamed and lacked quality, compared to the FB posts of the leading media outlet.***

Building on the argumentation for information quality, it can be assumed that there could be a correlation between the quality of the posts and the quality of deliberation taking place under the specific post. This assumption is made as one of the attributes for successful deliberation was identified to be the quality of information, thus the fourth hypothesis was formed accordingly:

- ***Hypothesis 4 (H4): High quality of information provided by the Facebook post attracts higher quality of public deliberation around it.***

Referring to the group socialization theory introduced earlier, it is believed that people are naturally prone to engage in group discussions and, based on their confirmation bias, they will find it more comfortable to engage if the group supports their views. Additionally, people will also fulfill the need to reinstate already accepted opinion in the group rather than challenge it. This creates polarization within the discussions. According to the attributes of successful deliberation, however, polarization of opinions, or the lack of diversity in the discussion negatively affects the quality of deliberation. To explore the state of polarization on Facebook's discussions during the movement, several additional hypotheses were introduced:

- ***Hypothesis 5 (H5): There was a negative correlation between the polarization of the page and the quality of deliberation.***

- ***Hypothesis 6 (H6): There was a positive correlation between the degree of polarization in the discussion and the level of engagement the post attracted.***
- ***Hypothesis 7 (H7): Opinion polarization on Facebook's discussion spaces grew over time in the period preceding the revolution.***

It can be assumed, that, unlike one or the other side of the movement, the media was more balanced in its presentation of information, and accordingly would have been expected to appeal to wider public. Also, the existences of the significant amount of diasporan Armenians following the course of the events online from all around the world who were not actively participation in the protests on the ground, thus not benefiting from the short, call to action 'check-in' posts of the officiation could not be ignored. To test whether this assumption is valid, another hypothesis was introduced:

- ***Hypothesis 8 (H8): Facebook pages of media outlets had higher engagement compared to the Facebook pages of the opposition side and the ruling party.***

The quality of information provided by the page would presumably invite rational contributions to be made in relevance to it. Thus, to test if this assumption holds true, the hypothesis was formulated as:

- ***Hypothesis 9 (H9): Posts with a higher quality of information had more rational contributions made under the comments.***

During the interviews both journalists mentioned the exponential growth in numbers of the people supporting the opposition and thus fighting for revolution. According to insights from these interviews, through a short period of time streets in the city became heavily populated by people, although the movement started with just a few. This could affect emotional state of the public, their mood, and thus also reflect negatively on their

desire and ability to deliberate. To get a better picture of what was happening during this time on Facebook, the last hypothesis will test the following:

- ***Hypothesis 10 (H10): Throughout the social movement preceding the revolution the quality of deliberation on Facebook experienced a decline.***

With the above outlined ten hypotheses this thesis is addressing its main goal, including its main questions and three sub-questions. The additional hypotheses were added at a later stage in the process of data analysis:

- ***Hypothesis 11 (H11): After the successful revolution, the information quality of the Facebook posts of Nikol Pashinyan had improved.***
- ***Hypothesis 12 (H12): After the successful revolution, the quality of deliberation on the main Facebook pages had improved.***

These two assumptions do not directly address the questions in the research, as they consider the post-revolution period of the state of deliberation in the country. However, as part of the data was already derived from Facebook and the opportunity to unlock some more insights regarding overall deliberation patterns, the decision was made to include those two additional units of research into the thesis.

5.3 Methods for Data Analysis

Several measurement matrixes were used in this study for the analysis of selected Facebook pages – specifically to measure (1) the *information quality* of the chosen posts, (2) the *engagement rate* of the posts as well as comments separately, and (3) the *deliberative quality* of the discussions in the comments section.

- (1) The *information quality (IQ) score* was essential in this analysis to establish the quality of the content of the posts, and when applicable the articles linked in the

posts that were shared by the moderators of each account. As already highlighted, a fair and accurate delivery of an objective and balanced information from the group moderators to the users is an essential starting point of a deliberation. In order to evaluate the level of the information presented to the public, a simple yet proven to be effective matrix was adopted. The matrix is based on the Information Quality literature presented in the Literature review section. (Kargar, Ramli, et al., 2008; Malá & Černá, 2012). From the range of dimensions discussed in different papers, the following were chosen for evaluating the information presented in Facebook groups.

A score from 1 to 10 was assigned for each dimension detailed in Table 3. In the cases where the post contained a link or had a form of video or audio message, the post itself as well as the attachment to it were evaluated and averaged out accordingly. Using this evaluation, the *information quality score* was calculated for each post as follows:

$$\text{Information quality score} = (\text{accuracy score} + \text{objectivity score} + \text{authority score}) / 3$$

** for a single unit of information*

Dimension	Meaning
Accuracy (1-10 points)	Extent to which data are correct, reliable and certified free of error.
Objectivity (1-10 points)	Extent to which information is unbiased, unprejudiced and impartial.
Authority (1-10 points)	A post or an article to which the author is known and verified.

Table 3 Information Quality Score Evaluation Metric

- (2) To assess the popularity of the posts analyzed another matrix was adopted based on Vadivu and Neelamar's (2015) suggested approach. Accordingly, the *post engagement rate* is calculated by considering the likes, comments, and shares the post received, where each engagement type is weighted differently:

$$\text{Post Engagement Rate} = (TL \times 1) + (TC \times 2) + (TS \times 3)$$

$TL = \text{total likes}$

$TC = \text{total comments}$

$TS = \text{total shares}$

Throughout the analysis there were 15 posts with the highest engagement rate initially identified. Further, the top 15 comments that those posts had generated, were also identified for the analysis.

Comments of other participant could only be reacted to (using negative as well as positive reactions offered by the platform as a feature) or further commented on (a contribution that is termed “sub-comment” in this paper), but not shared. Hence, in a further simplification of Vadivu and Neelamar’s (2015) method, *comment engagement rate* is calculated in the following way:

$$\text{Comment engagement rate} = (TL \times 1) + (TC \times 2)$$

$TL = \text{total likes}$

$TC = \text{total comments.}$

The engagement of the pages was not taken into consideration in the scope of this research as the pages analyzed became more active (or some contrary more passive) throughout the time following the research period of 2018, so it would not present any valid findings if those present engagement rates were considered. Nor does Facebook offer a tool to check for this figure in retrospect.

- (3) Lastly, the measurement method for the *deliberative quality score* of each comment under the selected pre-posts was calculated. For this purpose, the attributes necessary for a successful online deliberation discussed in more detail in the systematic literature review in the beginning of the paper were considered. More specifically, one of the papers included in the selection of the most relevant papers on deliberative democracy was offered a comprehensive matrix for the evaluation of dilatative quality. What follows below is an adaptation of that measurement matrix developed by Esau, Friess, et al. (2017).

In this study, it was decided to make a distinction between the comments that triggered engagement among users, and the conversation itself, referred to as a thread of *sub-comments*. It is proposed in this paper that evaluating each comment in isolation would not be able to provide sufficient insight into the overall tone of a discussion triggered by a highly engaging comment. Nor it will be efficient considering the huge number of data point and the time restrains. Therefore, only the rationality score refers to a single comment, while the dimensions of reciprocity, respect, and constructiveness holistically evaluate the discussion consisting of both the comment and the sub-comments underneath -- see Table 4. To quantify each dimension and its respective measurement, coding consisted of attributing a score between 1 and 10 to each comment or sub-comment thread; Table 4 details how this was done. Two of the dimensions consisted of two measurements which were evaluated separately and averaged out.

Dimension	Measurement	Meaning	Score of 1	Score of 10
COMMENT: Rationality (1-10 points -- average of Topic relevance + Reasoning)	Topic relevance (1-10 points)	<i>Does the comment relate to any topic mentioned in the post?</i>	The comment is completely unrelated to any subject mentioned in the post	The comment directly responds to an idea mentioned in the post
	Reasoning (1-10 points)	<i>Does the comment include at least one reasonable/rational argument?</i>	The comment is a mere assertion of the commenter's view or feeling	The comment develops an argument, using evidence and an explanation of its significance
COMMENT & SUB-COMMENTS: Reciprocity (1-10 points -- average of general engagement + argumentative engagement)	General engagement (1-10 points)	<i>Does the comment generate new replies & likes?</i>	No active engagement with the comment	A large number of substantive sub-comments generated
	Argumentative engagement (1-10 points)	<i>Is the nature of the generated replies constructive and argumentative?</i>	There might be some comments, but they are unrelated to each other	The sub-comment thread is a thoughtful exchange of arguments, ideally supported by a source
COMMENT & SUB-COMMENTS: Respect (1-10 points)	Respectful communication/hate (1-10 points)	<i>How respectful can this comment be considered for other users?</i>	Swear words, open hostility, stereotyping groups	Compassionate and respectful language extended even to users voicing opposing views
COMMENT & SUB-COMMENTS: Constructiveness (1-10 points)	Constructive/useful contribution (1-10 points)	<i>Does this comment introduce any constructive element or approach?</i>	Clearly a copy-pasted comment / a platitude	Proposals or solutions are mentioned / new angle is introduced

**Table 4 Dimensions, Measures, and Measure Definitions: Deliberative Quality
Score**

What is not included in this table is the information quality, which is considered as a separate measurement unit and the anonymity of the contributor. The decision was made to waive the first attribute of the successful deliberation included in the initial list presented in the literature review as Facebook does not offer an option for complete anonymity. However, it should be noted that the journalists interviewed had mentioned a significant cases of fake, or no-name, no-avatar Facebook accounts that were present in the discussions sometimes with quite heavy and informative content. Unfortunately, those pages were mostly deleted after the revolution and only few cases were encountered in the process of analyzing the dataset. Therefore, the unknown accounts, or fake account and their impact on the deliberation was not considered in the scope of this study

While evaluating the comments, to ensure reliability and consistency withing the interpretation of the measurements, a set of randomly chosen sample comment threads was reevaluated after the whole process was done to arrive at interpretive convergence (Saldana 2016, p. 27), of the scores warranted by different types of contributions and situations. The divergence of scoring after revaluation was between 0,1 and 0,5 which was considered to fall withing the acceptable margin.

6 Data Analysis through Hypotheses Testing

The summary below presents the results of the analysis conducted on the relevant Facebook pages. Some of the tables were shortened and summarized to save the space. Complete spreadsheets are included in the appendix of the thesis.

Testing H1: The opposition supporting Velvet Revolution was more vocal on Facebook compared to the other side which led to formation of a dominating echo-chamber.

As a first step, the opposition's protests leader Nikol Pashinyan's Facebook posts were analyzed in the timeframe from March 31st (the day when the protests started) to May 8th (when the ruling government officially resigned). The initial intention of the analysis was to compare the pages of the leaders on opposing sides regarding their Facebook presence and activities. However, in the process of data collection it became apparent that these were completely imbalanced representations, as neither the official page of the countries Prime Minister nor the party page of the ruling government had any engagement worth considering. Eventually, the analysis had to consider FB page of another politician – at those times the education minister, also member of the ruling party Armen Ashotyan. His page was the most active page compared to all his party peers. In the table below the distribution of the activities of the two opposite sides.

Facebook presence based on the page activity	Number of posts March 31- May 8, 2022	Engagement Score (average/per post)
Nikol Pashinyan (protests leader)	476 (11-12 per day)	16.613
Armen Ashotyan (republican minister)	73 (2 per day)	320

Table 5 H1 - Facebook presence N.P. and A.A.

In total, N. Pashinyan had 427 posts during the whole period of protests - 37 days. This is a significant number of posts averaging 11-12 posts per day. A random selection of 100 posts was measured against the engagement score matrix introduced above. This resulted

in engagement score of 16.613 per post, which is, again a significantly high number compared to the most active FB page from the side of the ruling government, Armen Ashotyan's page figures with 320 engagement score for 2 posts per day. It is also worth noting here, that the leader of the opposition had supporters who also ran their FB pages quite actively attracting great deal of engagement, compared to the very silent, almost non-existing-on-Facebook government.

For this analysis the data on the number of posts, respectively the number of Likes, Comments and Shares was collected and submitted in excel file. A snapshot of such table can be seen below in Table 1 as an example.

Nikol Pashinyan (opposition leader)					Armen Ashotyan (Republican minister)				
Posts March 31 - May 8	Likes (TL)	Comments (TC)	Shares (TS)	Post engagement (TL+2*TC+3*TS)	Posts March 31 - May 8	Likes (TL)	Comments (TC)	Shares (TS)	Post engagement (TL+2*TC+3*TS)
post 1	8500	2000	288	13364	post 1	216	17	1	253
post 2	11000	2800	5300	32500	post 2	780	28	43	965
post 3	533	24	90	851	post 3	164	0	6	182
post 4	1500	570	160	3120	post 4	1100	61	19	1279
post 5	208	5	10	248	post 5	130	1	4	144
post 6	1000	47	53	1253	post 6	587	11	24	681

Table 6 H1 - Facebook presence dataset analysis example

From this rather straight-forward analysis it is confidently seen that opposition had utilized Facebook as a platform for engagement way more actively than the ruling government in power did. It is also worth noting that N. Pashinyan's posts were strictly related to the protests, with no single exception, which was not the case on the other side, that had rather neutral, more socio-cultural content on the page at the first half of the timeframe analyzed. Judging by the engagement scores of the posts of the opposition it is clear that Facebook had a high popularity among the public and did facilitate the protests online – as producing 11-12 high engagement posts is not an easy result. Based on the above analysis it can be concluded that:

- Protests leader Nikol Pashinyan's Facebook page was generating a significantly high amount of pro-revolution content that was extremely popular within the public.
- The activity on Facebook was highly unbalanced between the opposition and the government in power, resulting in potentially impaired deliberation as public

was exposed to a one-sided information.

- The opposition supporting Velvet Revolution was more vocal on Facebook compared to the other side which led to formation of a dominating echo-chamber.

Testing H2: Posts of the opposition party leader Nikol Pashinyan were lacking information quality, compared to the ones of the ruling government.

To perform the comparison 15 posts with relatively high engagements were selected from the two FB pages already analyzed in the H1 testing – Nikol Pashinyan and Armen Ashotyan. The selection was at times random, however the posts with lower engagement or very short content were ignored on purpose, to accommodate the evaluation of the information quality (IQ) based on the measurement framework introduced earlier in Table X suggesting independent evaluation of *accuracy*, *objectivity*, and *authority*. To quantify each dimension and its respective measurement, coding consisted of attributing a score between 1 and 10 to each comment or sub-comment thread, the scoring was done in relative perspective, comparing posts with one another to better balance the distribution and avoid personal biases in the process. Below tables illustrate the process of evaluation of the IQ on both pages (See Tables 7 and 8).

Nikol Pashinyan (opposition leader) posts analysis							
Post Nr.	Engagement Score	Accuracy	Objectivity	Authority	Total	Notes	Attachement?
1	11.000	8	5	9	7,3	N.P. encourages people to join the protest/time, place, reason	text
2	20.000	8	8	7	7,7	Member of the parliament Lena Nazaryan - informative video	video
3	15.000	6	6	9	7,0	Video wrapping up the 1st day - N.P. & respected people speaking	video
4	16.000	7	5	7	6,3	Protests with cars - closing the streets	video
5	35.000	9	9	10	9,3	Calling people to join him in the main square - time, place	video
6	28.000	6	8	9	7,7	N.P. talking about the threats for him - people's candidate	video
7	29.000	8	8	8	8,0	N.P. sharing photos of all his certificates and diplomas of higher edu.	photo
8	33.000	9	7	10	8,7	Photo from the drone - huge amount of people protesting	photo
9	9.000	8	7	8	7,7	Press conference with one of his peers	video
10	14.000	8	8	8	8,0	N.P. on the protests agenda for the coming day - encouragement	video
11	9.000	9	8	10	9,0	N.P. on his phone call with Wess Mitchell - American diplomat	text
12	23.000	5	5	8	6,0	N.P. photo with tens of journalists - apter his press conference	photo
13	12.000	5	4	7	5,3	Short video from the protests - encouraging	video
14	5.400	6	6	9	7,0	Video - N.P. & respected people speaking about the protests	video
15	7.400	9	8	7	8,0	Member of the parliament Lena Nazaryan - informative video	video
Average	17.787	7,4	6,8	8,4	7,5		

Table 7 H2 - Information Quality (IQ) calculation N.P.

The analysis of IQ on Nikol Pashinyan's page resulted in relatively high indicator for the overall IQ – 7.5 out of 10. Based on the general observations, the posts were well-structured, mostly included video messages to the public complemented by a clear title and summary text in the captions. In several video messages Nikol Pashinyan was joined

by other well-respected politician, cultural and academic figures present discussing and sharing their thoughts on how protests are going so far. All 15 posts were within the context of the protests, revolution, and argumentations against the ruling government. Another interesting observation was the balance of the posts in terms of their format and frequency of the posts per day. The overall atmosphere and the mood of the posts was quite positive, encouraging people to join peaceful protests, with no call on aggression on unrest. Many videos had a format of friendly conversation, in a very informal language which probably appealed to the public as those were normally the ones with particularly high engagement.

Armen Ashotyan (government in power) posts analysis								
Post Nr.	Engagement Score	Accuracy	Objectivity	Authority	Total	Notes	Attachement?	
1	965	7	5	6	6,0	One-on-one dialogue with N.P.	article link	
2	1.279	6	3	8	5,7	Short poem about personal dissapointments from his own party	text	
3	681	7	7	5	6,3	Meeting with the ruling PM - issues discussed	article link	
4	1.649	5	5	8	6,0	Friendly picture with ex-minster from the party	photo	
5	747	3	3	8	4,7	Attending congress in Seville	photo	
6	1.143	3	5	9	5,7	Formal meeting with the U.S. Ambassador	photo	
7	885	2	4	7	4,3	humoristic video with a member from another party	video	
8	559	5	5	8	6,0	Formal meeting in the UK embassy	photo	
9	1.344	3	3	6	4,0	Happy birthday post to a colleague	photo	
10	619	6	6	8	6,7	Joint press conference with the Russian Miniser	photo	
11	455	4	4	7	5,0	Visiting cultural event in Yerevan	photo	
12	1.042	3	3	7	4,3	On his recent interview - no content	photo	
13	287	1	1	6	2,7	Attending a wedding of a friend	photos	
14	391	2	2	7	3,7	Selfie from the parliament hearing - no content	photo	
15	402	7	7	7	7,0	Challenging N.P. and his strategies	article link	
Average	830	4,3	4,2	7,1	5,2			

Table 8 H2 - Information Quality (IQ) calculation A.A.

The IQ for Armen Ashotyan's posts averaged 5.3 out of ten, which is quite low considering that the dimensions for Accuracy and Objectivity were particularly low. Most of the posts carried a format of a brief check-in talking about Ashotyan's travels, outings of meetings with high-positioned diplomats. Surprisingly on 2 posts addressed the protests and Nikol Pashinyan. In the "Notes" column the general nature of each quantified post is provided, the impression from the page was that no protests were happening outside in the streets and the government was following its normal schedule. A very little textual content was posted on the page which is, again, surprising considering that this was the most active Facebook page reckoned out of the key government officials back in 2018.

Testing H3: Posts of the opposition leader Nikol Pashinyan were mainstreamed and lacked quality, compared to the FB posts of the leading media outlet.

A similar comparison was conducted for H3. However, a decision was made to include 3 different media outlets in this case to increase the validity of the analysis, as different media outlets can vary in the IQ they provide. The three outlets included in the analysis were PAN.am, Civilnet and Azatutyun Radio media outlets.

Media outlets								
Post Nr.	Engagement Score	Accuracy	Objectivity	Authority	Total	Notes	Attachments?	
PAN.am								
1	3.400	9	7	8	8,0	Article on corruption scandals in the Government	article link	
2	1.279	6	7	8	7,0	phone conversation with ruling Minister - on a scandal	recording	
3	681	7	7	5	6,3	Meeting with the ruling PM - issues discussed	article link	
4	3.500	5	5	8	6,0	Press conference with N.K	video	
5	12.000	8	8	8	8,0	live connection from the parliament - journalist' questions	photo	
Azatutyun								
6	1.143	8	7	8	7,7	Governments meetig with the U.S. Ambassador	photo	
7	885	7	7	7	7,0	Report on the recent investments in the country	article link	
8	14.000	8	9	8	8,3	Interview with the ruling givernemnt's finance minister	photo	
9	1.344	6	8	7	7,0	Oppositions' protests in Sevan	vides	
10	8.600	9	9	9	9,0	Press conference with N.K	video	
Civilnet								
12	827	7	9	7	7,7	article on the current government's challenges	article link	
13	2.700	6	9	6	7,0	Video from the protests	video	
14	525	7	7	6	6,7	Informative post about the ruling Government's mistakes	video	
15	402	9	9	7	8,3	Interview on the planned policy proposals with the opposition	article link	
15	1.700	9	9	8	8,7	Press conference with N.K	video	
Average	3.563	7,4	7,8	7,3	7,5			

Table 9 H2 - Information Quality calculation Media Outlets

The average IQ was quite high for the media outlets posting during the protest prescinding the revolution. The score equaled the same sore that was calculated on Nikol Pashinyan's Facebook. However, unlike the opposition leader's Facebook all three media outlets had a balanced distribution of topics, and were reporting on both, the oppositions movements, and the ruling governments agenda. The posts were also balanced in their accuracy and objectivity, quite informative and full of content. The engagement scores however could not compete the ones that the opposition hold. The engagement was around 6 tames lower on average. Additionally, neither media outlet seemed to post a sufficient amount of news especially if contrasted with the opposition's Facebook pages. In fact, it was a challenge finding the posts for this analysis on all three media outlets pages. Therefore, following was concluded after testing H2 and H3:

- Although opposition leader posted exclusively about the movement, the posts had high quality of information, including accuracy, objectivity, and authority.

- The ruling government minister’s activity on Facebook was rather poor – lacking both quality in the information provided and relevance to the events happening at that time.
- The main media channels, although quite passive on actions, provided high quality and balanced information, not provoking any more polarization.

Testing H4: High quality of information provided by the Facebook post attracts higher quality of public deliberation around it.

To test whether there was a positive correlation between the quality of the information provided by the posts and the quality of deliberation, the sample of 15 posts from the dataset, with already measured IQ scores was revisited to investigate the comments sections. Radom selection of comments under each post was measured against the matrix adopted from Esau et al (2017) introduced earlier in the methodology. Accordingly, each comment was evaluated against its rationality. Following this the sub-comments of the certain comment were further looked at to be assessed against the three other dimensions of reciprocity, respect, and constructiveness. Based on this strategy the deliberation was measured not simply based on the individual comment, but the separate discussions they evoked. To quantify the comments and sub-comments for each dimension and its respective measurement, coding strategy again followed the approach of attributing a score between 1 and 10 to each comment or sub-comment thread. This exercise was repeated for 15 posts and averaged out. Table X summarizes the results for 15 posts. . Figure 2 below illustrates an example of such analysis for a single post.

Post 1					Rationality			Reciprocity			Respectful		Constructiveness		Revolution		Pro/Against Revolution		
Comment No.	User's Name	Likes	Sub-Comments	Engageme nt Score	Notes? (Optional)	Topic Relevance	Reasoning	Average	General Engagement	Argumentative engagement	Average	Respectful communication	Constructive Contribution	TOTAL Average	Pro/NI/Against	Pro Revolution	Neutral	Against Revolution	
1	Gurgen Hohenitsyan	34	21	76		7	4	5.5	7	7	7	7	6	7.6	no	10	0	0	
2	Alek Sander	11	4	39		5	1	3	6	1	4.5	10	4	5.4	n	4	0	0	
3	Չոթի Գրիգորյան	1004	20	1660		5	4	4.5	8	4	6.5	7	4	5.5	no	15	1	1	
4	Գրիգոր Բախյան	53	40	152		5	3	4	8	4	6	6	4	5.8	no	30	1	0	
5	Նազան Խաչատրյան	39	4	197		5	2	3.5	3	3	3	7	3	4.6	no	11	0	1	
6	Արթուր Առեկանյան	98	50	198		2	2	2	3	3	3	8	2	3.3	no	42	0	0	
7	Մկ. Գրիգորյան	54	1	58		4	1	4.5	3	4	4.5	6	4	5.3	no	1	0	0	
8	Լուսինե Կայսրաթյան	366	47	658		6	3	5.5	7	7	7	7	7	6.6	no	34	0	0	
9	Կարենա Շահվաղյան	487	8	483		8	3	6.5	7	7	7	7	6	6.6	n	6	2	1	
10	Կարինե Ջառնյան	64	1	67		3	3	2.5	1	1	1	6	3	3.8	no	8	1	0	
11	Յաննա Առեկոսյան	42	22	86		3	3	4	4	3	3.5	7	3	4.8	no	15	0	0	
12	Մարտն Կրակոսյան	15	1	17		3	2	4	3	2	3.5	4	3	4.2	no	10	2	1	
13	Կաջոց Կայսրյան	11	1	18		6	4	5	4	1	3	7	4	4.8	no	9	0	1	
14	Տոնա Դավթյան	8	1	77		7	2	4.5	3	4	4.5	7	3	5.3	no	0	0	2	
15	Նինե Բաղասյան	4	0	7		4	3	3.5	2	0	2	6	6	5.1	no	6	0	0	
					4.1916	6.8			5.8			7.8		5.8		39/ 37/ 0			

Figure 1 H4 - Deliberative Quality score calculation example

Nikol Pashinyan (opposition leader) Comments against deliberation											
Post Nr.	Engagement Score	Rationality	Reciprocity	Respect	Constructiveness	DQ	Pro revolution	Neutral	Against revolution	Pro Revolution	Against Revolution
1	11.000	4,6	5,0	7,2	4,5	5,3	183,0	47,0	13,0	75%	5%
2	20.000	5,0	6,7	7,0	7,5	6,6	500,0	34,0	6,0	93%	1%
3	15.000	4,9	6,5	7,3	5,6	6,1	256,0	54,0	5,0	81%	2%
4	16.000	5,2	5,0	6,5	4,2	5,2	150,0	35,0	2,0	80%	1%
5	35.000	4,9	7,1	7,3	4,1	5,8	1299,0	5,0	3,0	99%	0%
6	28.000	4,8	6,2	6,8	4,6	5,6	879,0	4,0	3,0	99%	0%
7	29.000	4,8	5,9	7,0	4,3	5,5	876,0	14,0	11,0	97%	1%
8	33.000	5,1	6,9	6,3	4,0	5,6	320,0	3,7	10,0	96%	3%
9	9.000	5,3	4,1	7,8	3,9	5,3	120,0	35,0	3,0	76%	2%
10	14.000	6,1	6,6	6,8	3,8	5,8	1100,0	7,0	5,0	99%	0%
11	9.000	5,2	4,3	7,1	4,6	5,3	230,0	46,0	4,0	82%	1%
12	23.000	5,4	6,8	6,8	6,7	6,4	540,0	45,0	4,0	92%	1%
13	12.000	5,6	4,6	7,3	5,9	5,9	159,0	32,0	2,0	82%	1%
14	5.400	6,7	4,5	7,4	6,8	6,4	43,0	32,0	2,0	56%	3%
15	7.400	6,1	5,9	7,1	4,3	5,9	23,0	9,7	5,0	61%	13%
Average	17.787	5,3	5,7	7,0	5,0	5,8	445,2	26,9	5,2	85%	2%

Table 10 H4 - Deliberation Quality calculation

The Deliberation Quality (DQ) measured under Nikol Pashinyan's posts equaled 5,8 points, a little above average, which cannot be considered high. However, what is worth noting here is that the dimension of Respect was noticeably high for most of the threads analyzed, which also resulted in averaging out higher DQ score than otherwise could be achieved, considering poor indicators for Rationality and Constructiveness. The fact that Respect was particularly high in the comments could be potentially linked to the overall positive, friendly, and non-aggressive posts from Nikol Pashinyan that were highlighted when looking at the IQ in the above section.

The regression analysis was done to see whether there is any correlation between the DQ and IQ on Nikol Pashinyan's page. Although deliberative quality of people's contributions was not particularly high, the R- square analysis resulted in a slightly positive correlation between the raise of IQ and a slightly better deliberation. However, this result is not considered significant as in order for the correlation to be considerable the R – square should normally be above 0,7 (70%).

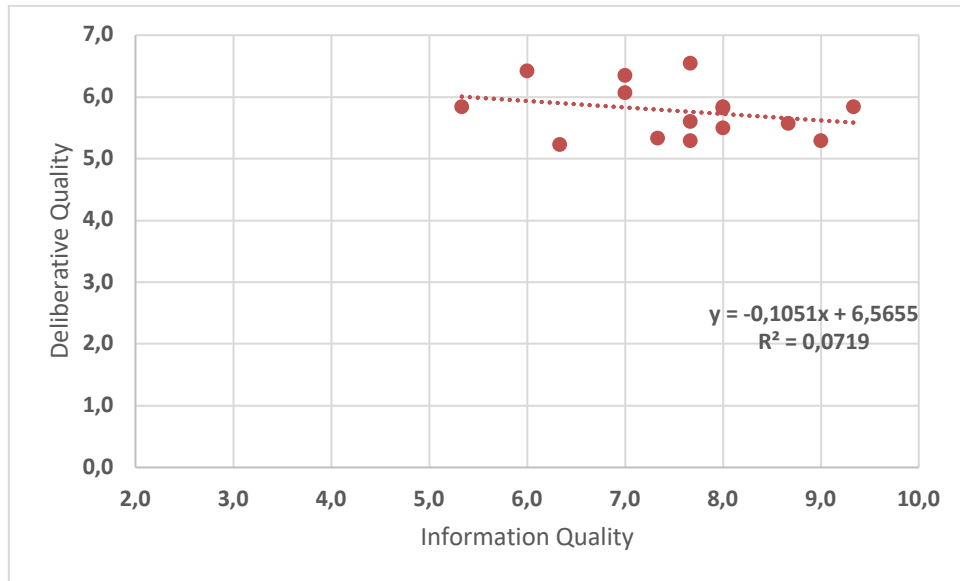


Figure 2 H4 - Deliberative Quality and Information Quality

An observation to be looked at in more detail was the polarization state of the comments under the posts. As already outlined, Nikol Pashinyan's Facebook was an information bubble, exclusively communicating pro-revolutionary content encouraging people to join the protests in the streets. The deliberation under these comments was also highly polarized. With, on average 85% contributions being strongly supportive of the protests, the opposition, and the revolution. The comments carrying a negative stance on the ruling government were mostly considered under this percentage, sometimes also labels as neutral, depending on the contextual clues. Only 2% of the contributions was against the protest.

Testing H5: There was a negative correlation between the polarization of the posts and the quality of deliberation.

To measure whether the particularly higher polarization of certain threads of comments resulted in lower deliberation, as it was assumed to be the case based on pre-researched literature, another correlational analysis was conducted, this time run against the polarization indicators and the quality of deliberation (see Table X for the reference). The scatterplot below shows the results of the analysis, being, there was no correlation established between the level of polarization and the quality of deliberation under a given post, neither negative nor positive (see Figure 4). However, it can be safely stated that, although in terms of 4 dimensions measuring DQ in our analysis there was no effect from polarization, the overall discussion was still highly polarized thus no diverse and balanced

opinions were communicated. So polarization could still be the reason for generally low quality of deliberation, as people did not feel the need to explain their attitude, if they knew nearly everyone else in that comment thread would agree with them.

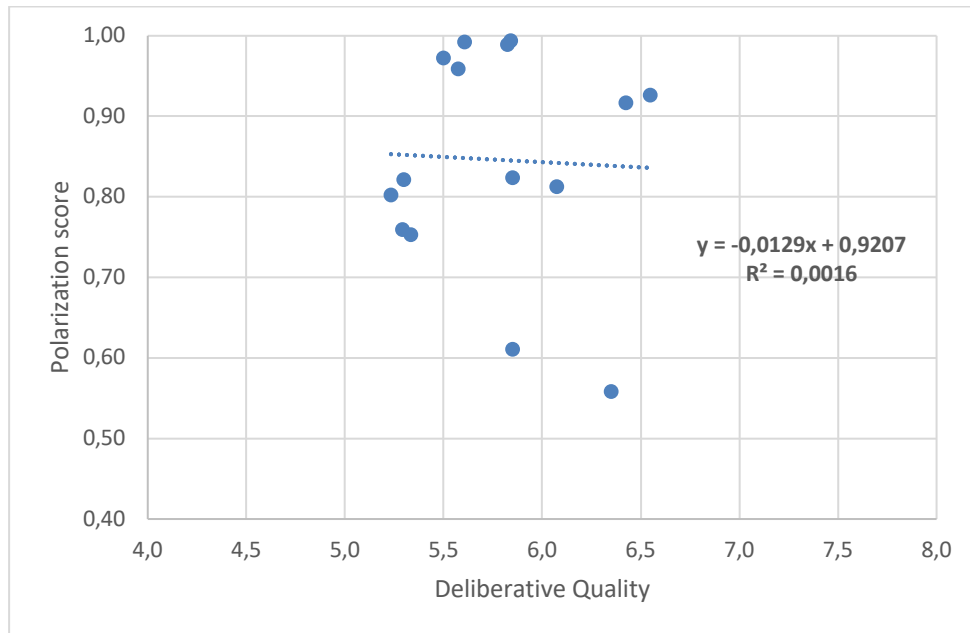


Figure 3 H5 - Deliberative Quality and Polarization Score

Testing H6: There was a positive correlation between the degree of polarization in the discussion and the level of engagement the post attracted.

Further, another analysis attempted to check whether the extreme polarized discussions were attracting more like-minded people to join and amplify the one-sided opinions even further, referring to the two phenomena explained in the paper as group socialization theory and confirmation bias. For this analysis we checked for a positive (or negative) correlation between the polarization scores of the comments of 15 posts against their engagement scores. The regression analysis resulted in a significantly high positive correlation between those two dimensions, with a R – square showing around 80% positive relationship between the polarization score and the engagement score of the discussions (see Figure 5).

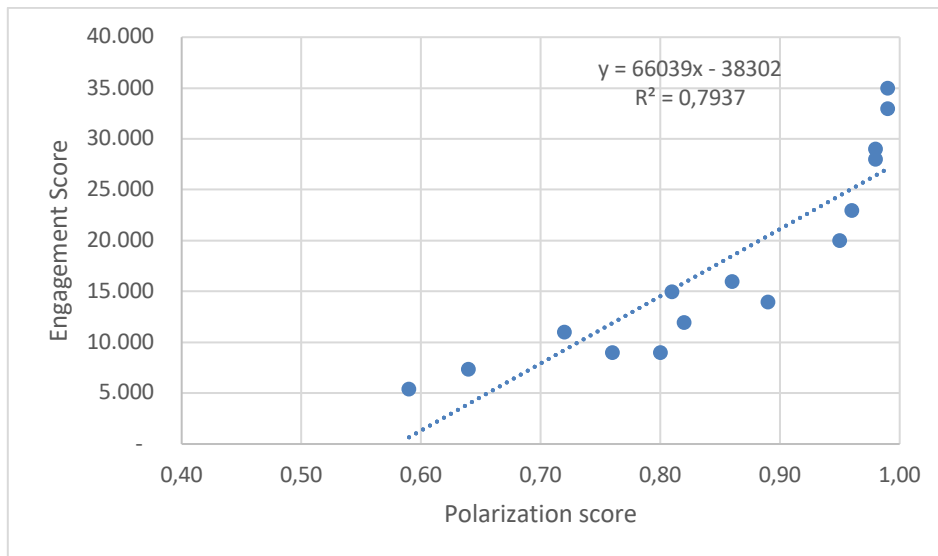


Figure 4 H6 - Polarization Score and Engagement Score

In the process of analyzing the results after testing H4, H5 and H6 several conclusions were made:

- The high quality of information provided by Facebook posts did not necessary attract a higher quality deliberation around it, however it seemed to ensure overall respect within the communicating groups.
- As IQ of the posts got better it only insignificantly affected the increase in deliberative quality.
- There was a significantly high one-sided polarization of opinions in the comment threads under Nikol Pashinyan's FB page, which also was providing exclusively pro-revolution content.
- There was no change in the quality of deliberation connected to polarization of the comments, in fact, those two dimensions were completely independent.
- It could be safely assumed that overall law deliberative quality was a result of, among other things, high polarization in the comment threads as people did not feel the need to rationally explain their views in a nearly complete homogenous bubble.

- The posts that had the highest polarization scores had also the highest engagement rate, moreover, those two scores were highly correlational in the proportional matter of increase and decrease.

Testing H7: Opinion polarization on Facebook’s discussion spaces grew over time in the period preceding the revolution.

Out of the original number of posts which equaled 473 a random selection of 50 posts was recorded and measured for level of polarization under its comments. The measurement followed already explained format (see table C). The posts were arranged in chronological order to check for any pattern in their polarization scores. There was no rising neither falling polarization identified based on the timing of the posts in the overall period of the protests. Thus, it was concluded that:

- The level of Polarization in the comments did not increase over the period of the protests, moreover, significant high score of polarization was recorded already from the beginning of the protests.

Testing H8: Facebook pages of media outlets had higher engagement compared to the Facebook pages of the opposition side and the ruling party.

The initial selection of three media outlets was compared with Nikol Pashinyan’s and Armen Ashotyan’s Facebook pages regarding their engagements. The opposition leaders Facebook had significantly higher engagement score was than any other page in the sample. Table 11 below summarizes these results.

	N.Pashinyan	A. Ashotyan	PAN.am	Civilnet	Azatutyun radio
Engagement Score (averaged)	16.613	320	4.172	1.231	5.194

Table 11 H8 - Engagement scores comparison

- The opposition's side was attracting the highest numbers of engagement during the period preceding the revolution having on average 5 times higher engagement scores compared to the media pages and 50 times more than the ruling government's side.

Testing H9: Posts with a higher quality of information had more rational contributions made under the comments.

The assumption that high quality posts attracted rational contributions was found to be invalid as, unlike that high IQ of the posts (7.5), the rationality of the online contributions under the comments was assessed on average quite low (5.3). However, as already mentioned, there was a pattern of higher-than-average indication for Respect, which was worth to be highlighted (see Table 12).

- Although the quality of information did not attract rational contributions, it seemed to affect the respect and civility of the deliberation.

Nikol Pashinyan (opposition leader) Comments against deliberation					
Post Nr.	Engagement Score	Rationality	Respect	IQ	Notes
1	11.000	4,6	7,2	7,3	N.P. encourages people to join the protest/time, place, reason
2	20.000	5,0	7,0	7,7	Member of the parliament Lena Nazaryan - informative video
3	15.000	4,9	7,3	7,0	Video wrapping up the 1st day - N.P. & respected people speaking
4	16.000	5,2	6,5	6,3	Protests with cars - closing the streets
5	35.000	4,9	7,3	9,3	Calling people to join him in the main square - time, place
6	28.000	4,8	6,8	7,7	N.P. talking about the threats for him - people's candidate
7	29.000	4,8	7,0	8,0	N.P. sharing photos of all his certificates and diplomas of higher edu.
8	33.000	5,1	6,3	8,7	Photo from the drone - huge amount of people protesting
9	9.000	5,3	7,8	7,7	Press conference with one of his peers
10	14.000	6,1	6,8	8,0	N.P. on the protests agenda for the coming day - encouragement
11	9.000	5,2	7,1	9,0	N.P. on his phone call with Wess Mitchell - American diplomat
12	23.000	5,4	6,8	6,0	N.P. photo with tens of journalists - after his press conference
13	12.000	5,6	7,3	5,3	Short video from the protests - encouraging
14	5.400	6,7	7,4	7,0	Video - N.P. & respected people speaking about the protests
15	7.400	6,1	7,1	8,0	Member of the parliament Lena Nazaryan - informative video
Average	17.787	5,3	7,0	7,5	

Table 12 H9 - Information Quality compared to Rationality and Respect

Testing H10: Throughout the social movement preceding the revolution the quality of deliberation on Facebook experienced a decline.

Similarly, to the H7 a random selection of 50 posts measured against the level of deliberative quality under its comments. The posts were also arranged in chronological

order to check for any pattern in the deliberative quality scores. Alake the polarization scores, the analysis showed that:

- There was no chronological pattern of in the deliberative quality of the contributions on the opposition's Facebook page.

Testing H11: After the successful revolution, the information quality of the Facebook posts of Nikol Pashinyan had improved.

This initial set of data derived from the opposition leader Nikol Pashmina's Facebook page was compared against the posts from his recent activities on Facebook. A similar dataset was derived from his page activity in 2022, posting as the current Prime Minister of Armenia. The IQ score calculated of 15 recent posts from averaged the score of 8.5 which is a total point higher than the IQ calculated for the period preceding revolution (see Table 13). This is reasonable result also considering that N.P. now posts as the PM of the country with even more authority, reporting on his meetings with influential high-positioned leaders.

Nikol Pashinyan (Prime Minister) posts analysis								
Post Nr.	Engagement Score	Accuracy	Objectivity	Authority	Total	Notes	Attachement?	
1	6.110	8	8	9	8,3	PM summarises the main point after economic conference	Video	
2	6.800	8	9	8	8,3	Video footage of the PM visiting regions	video	
3	13.767	9	9	9	9,0	Video footage PM visiting local university graduation	video	
4	8.112	7	8	9	8,0	PM presenting at the congress of EA	video	
5	3.303	8	9	9	8,7	PM visiting Doha - speech at the congress	video	
6	6.806	9	8	9	8,7	PM summarising the economic reforms package	video	
7	7.350	8	8	8	8,0	PM presenting at the parliament hearing	video	
8	8.800	9	8	9	8,7	PM taking on oppositions' questions	video	
9	15.500	9	8	10	9,0	PM meeting with Charles Michelle in Brussels	video	
10	16.842	8	8	10	8,7	PM meeting Vladimir Putin	video	
11	12.766	9	8	10	9,0	PMs meeting - The Netherlands	video	
12	16.605	8	8	9	8,3	PM landing in the Netherlands	video	
13	9.140	9	9	9	9,0	Defense committee meeting	video	
14	9.668	8	8	8	8,0	PM on new reforms in education policy	video	
15	4.710	8	8	8	8,0	Government meeting - summary	video	
Average	9.752	8,3	8,3	8,9	8,5			

Table 13 H11 - Information Quality (IQ) calculation N.P. as PM in 2022

What sparked interest in this analysis was the engagement score of the posts, averaging 9.752 (See Table 7) which is around 50% less than the engagement the page had during the protest.

Testing H12 (refined): After the successful revolution, the quality of deliberation on Nikol Pashinyan's Facebook page has improved.

The last hypothesis was refined after more knowledge was gathered regarding the active pages during the protests back in 2018. As the only active page back in 2018 was Pashinyan's Facebook, the research compared the recent deliberation dimensions on his page with the ones during the protests. Table 13 below summarizes the results.

Nikol Pashinyan (Prime Minister) Comments against deliberation											
Post Nr.	Engagement Score	Rationality	Reciprocity	Respect	Constructiveness	DQ	Supporting PM	Neutral	Opposing PM	Pro Revolution	Against Revolution
1	6.110	4,5	6,0	5,0	7,0	5,6	103,0	13,0	47,0	63%	29%
2	6.800	5,0	6,7	6,2	6,0	6,0	68,0	12,0	32,0	61%	29%
3	13.767	4,0	4,6	5,0	5,4	4,8	345,0	5,0	54,0	85%	13%
4	8.112	1,0	4,3	2,0	6,0	3,3	12,0	2,0	54,0	18%	79%
5	3.303	1,0	7,1	1,0	1,0	2,5	4,0	1,0	67,0	6%	93%
6	6.806	4,0	7,1	4,0	2,0	4,3	32,0	1,0	75,0	30%	69%
7	7.350	3,4	4,1	1,0	2,0	2,6	23,0	2,0	89,0	20%	78%
8	8.800	6,0	5,4	6,0	5,0	5,6	32,0	3,0	1,0	89%	3%
9	15.500	5,5	4,1	4,0	3,0	4,2	69,0	4,0	34,0	64%	32%
10	16.842	3,5	6,6	5,6	1,0	4,2	32,0	3,0	122,0	20%	78%
11	12.766	5,0	4,3	6,0	2,0	4,3	150,0	35,0	2,0	80%	1%
12	16.605	6,5	6,8	7,3	6,7	6,8	540,0	45,0	4,0	92%	1%
13	9.140	5,0	4,6	7,0	4,0	5,2	159,0	32,0	2,0	82%	1%
14	9.668	1,0	4,5	2,0	1,0	2,1	12,0	1,0	78,0	13%	86%
15	4.710	3,0	5,9	6,0	5,0	5,0	23,0	9,7	5,0	61%	13%
Average	9.752	3,9	5,5	4,5	3,8	4,4	106,9	11,2	44,4	52%	40%

Table 14 H12 - Deliberation Quality calculation N.K. as PM in 2022

The analysis showed a decline in the deliberative quality of the the discourse on the page, with an average indicator for DQ as low as 4.4 (it was at 5.8 in the previous period, See Table 9). What is particularly striking is the dimension for Respect which saw a significant fall from 7.0 to 4.5 in recent engagements. During the analysis many comments were noted when the language used was rude, and even offensive. On the Rationality score of 3.9, it should be noted that the he comments were often not made in the scope of the topic of the post, but rather carried a more general message of being disappointed in the current government, or otherwise being supportive. Alternatively, there was no one-sided polarization recorded based on the observations, the polarization was still there, with 52% of contributions analyzed supporting the PM and 40% being vocally against him and the government, with a small neutral, in-the-middle opinions.

The results of last to tests can be summarized as:

- After the revolution, the information quality of posts on Nikol Pashinyan's Facebook page has improved, with a significant change of the narrative, now being the Prime Minister of the country.

- After the revolution the deliberative quality of online contributions on Pashinyan's page has significantly declined, with the environment in the comments getting more aggressive and disrespectful at times.
- There is no one-sided opinion polarization in the online discussions anymore, however, there is a significantly distinct double-sided polarization with people either strongly supporting the Prime minister or voicing negative attitudes towards him and the current government.

7 Conclusion

The main question of this thesis directed the research to exploring the role of Facebook in facilitating the deliberative process in Armenia preceding its Velvet Revolution in 2018. Drawing back to the three sub-questions outlined to further lead the analysis, following research provided valuable insights into the power dynamics on the most prominent online platform between the opposition and the government in power in Armenia. A detailed analysis of the interconnectedness of information quality and deliberative practices was conducted to establish the extend of relevance of high-quality content in successful political discourses. Lastly, several socio-psychological behavioral theories were tested on the level of their soundness in the context of online discourses and engagement.

The importance and objectivity of Facebook as a platform for deliberative process was highly discussed and questioned in recent years. Social behavioral studies and experiments were conducted to see whether and, if yes, to what extent does the collective opinion influence a person's attitude towards a certain topic. Thus, this research was also an initiative to improve general understanding of the success of online discourse from a democratic value perspective by bringing to the table yet another case study.

The results from the data analysis provided valuable grounding for several implications that are relevant and applicable for further exploration of other similar online speres. The information bubble where the main discussions among the public were happening was highly one-sided creating an ultimate echo chamber with all its characteristics, just as in "*theory textbooks*". There was a constant, systematic, and well-structured communication campaign around the protests that was attracting a huge deal of attention and engagement. Although the research showed a high level of information quality provided by the opposition, it was still heavily nurtured by emotionally appealing and interactive content, aiming at creating a collective sense of joy, festivity, and friendship. On the same platform the 'opposite' side, the ruling government was nearly silent, not even engaged in any media or public affairs activity. The research thus provided a grounding to state that the one-sided polarization of the discussion booths in the bubble exclusively ran by the opposition resulted in jeopardized deliberation. Although the Velvet Revolution was considered in the country as a pure manifestation of democracy, the question is whether this democracy was not in fact very well-planned and facilitated.

There is no doubt that Facebook is a handy tool for politicians and can provide competitive advantage to politicians when utilized with effort, just as it was clearly done, and till today seems to have only improved in its performance, by Nikol Pashinyan - the current Prime Minister of Armenia. However, a reasonable concern is to what extent the policymakers are in fact expected to use Facebook to build their public image and not to make the privately owned platform the main ground for e-participation. After all these platforms, be it Facebook, Twitter or any other SSN are not directly affiliated with any state authority or government, nor the public and are therefore only indirectly encouraged to foster and facilitate public values. The modus operandi for private platforms still lies within maximizing their profits and do not concern themselves with the greater responsibility and accountability the government and politicians carry with their mandates.

7.1 Limitations

The absence of data from the side of the ruling government posed a challenge for the research that initially aimed at analyzing a comparable set of data from both sides of the political spectrum. Although a dataset from a single republican minister with a relatively active Facebook profile was eventually included in the analysis, the engagement levels on the page were not sufficient to be looked at in the context of measuring deliberative quality. Although the mere fact of nearly completely missing presence was included in the findings of this research, it could open a different prospect for interpretations if the data analyzed was balanced to cover the other side more extensively.

In the process of quantifying single data points for the methodology of the research, the evaluation and the interpretation of each comment were to a certain extent subject to and thus influenced by the personal understanding and attitude of the evaluator. Although several rating reliability measures were implemented, like double-assessment of the same dataset to minimize the margin of error, the fact should still be acknowledged.

Lastly, to ensure validity of the findings and yet planning for the feasibility of the project, the scope of the data points analyzed was limited to accommodate for the limited time and resources. Thus, the results of the study could be further enhanced by including more data points to the quantitative analysis.

7.2 Personal reflections

In this section I briefly share my experience throughout conducting this research project.

While researching the domain of e-Democracy and e-Participation in the last two years I got well-informed on the active trends and debates around the that current technological advances as well as the opportunities and threats they pose to modern democracies. Throughout my graduate studies I have research and analyzed both, private and public platforms in the context of greater and more effective e-Participation practices. These experiences naturally drew me to consider analyzing a case-study that manifested back in 2018 in my home country. I had a personal motivation to contribute to the research body in the country of my origin, especially considering the scarcity of literature on this domain drawing on Armenia, or other under-researched democracies. Thus, the choice for the topic of my thesis was naturally greatly affected, among other things, by my personal interests and ambitions.

Following the protests back in that period, I was wondering how mobilized and, at times assembled, the movement seemed. From my personal observations, also confirmed in views of my friends and family, the atmosphere in the city and on the streets was exceptionally festive with thousands of people attending the very peaceful protests. There was no clash of the two sides, no aggression, or any sign of conflict, the one expected from a disappointed population, going against their corrupted government. So, it was interesting to see a similarly high polarization of opinions also on Facebook, with a nearly complete echo chamber of a single dominant figure representing the movement, yet dead silence from the side of the ruling government.

Despite my personal motivations to contribute to the research on Armenia, I believe this type of study offers valuable insights also outside the context of a single country. As it was demonstrated through the results of the project, some of the psychological theories, applicable for any country and society had manifested in the discussions and, not having a resistance or moderation, resulted in amplifying the consequences of biases. These kind of real case examples can help shaping better moderation around public spheres that would contribute to more deliberative practices in the future.

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B Hypotheses testing calculations

Nikol Pashinyan (opposition leader)				
Posts March 31 - May 8	Likes (TL)	Comments (TC)	Shares (TS)	Post engagement (TL+2*TC+3*TS)
post 1	8500	2000	288	13364
post 2	11000	2800	5300	32500
post 3	533	24	90	851
post 4	1500	570	160	3120
post 5	208	5	10	248
post 6	1000	47	53	1253
post 7	990	190	100	1670
post 8	201	3	19	264
post 9	1200	270	124	2112
post 10	5300	2400	1000	13100
post 11	3700	766	511	6765
post 12	1300	100	76	1728
post 13	200	190	198	1174
post 14	20000	4500	11000	62000
post 15	15000	560	3800	27520
post 16	3000	113	232	3922
post 17	6200	123	1600	11246
post 18	16000	4500	3800	36400
post 19	4700	1600	850	10450
post 20	4100	1300	455	8065
post 21	3100	881	789	7229
post 22	15000	789	14000	58578
post 23	14000	720	5200	31040
post 24	13000	4900	2800	31200
post 25	10000	546	2300	17992
post 26	7600	1500	3600	21400
post 27	5400	229	1100	9158
post 28	7800	720	2600	17040
post 29	3500	251	756	6270
post 30	29000	2300	7300	55500
post 31	33000	915	8500	60330
post 32	7000	380	251	8513
post 33	28000	5100	7900	61900
post 34	2500	43	150	3036
post 35	2600	94	291	3661
post 36	8200	2100	850	14950
post 37	2000	229	219	3115
post 38	9400	2700	2200	21400
post 39	6900	1800	1100	13800
post 40	7400	305	388	9174
post 41	5500	423	691	8419
post 42	35000	9200	23000	122400
post 43	14000	3700	6400	40600
post 44	4200	810	834	8322
post 45	9000	2700	2500	21900

post 46	9000	174	2400	16548
post 47	3700	178	208	4680
post 48	5600	124	0	5848
post 49	3100	650	286	5258
post 50	3900	198	310	5226
post 51	8600	447	1200	13094
post 52	3200	245	456	5058
post 53	8300	2700	2700	21800
post 54	4900	10000	1200	28500
post 55	4100	135	789	6737
post 56	4700	1100	886	9558
post 57	7200	1000	2300	16100
post 58	4700	881	576	8190
post 59	2600	370	263	4129
post 60	5300	2400	741	12323
post 61	5200	242	1300	9584
post 62	2900	143	238	3900
post 63	1700	133	152	2422
post 64	5000	408	604	7628
post 65	11000	2800	3100	25900
post 66	10000	4700	2100	25700
post 67	23000	798	5000	39596
post 68	7300	114	630	9418
post 69	15000	5700	4100	38700
post 70	13000	2100	4500	30700
post 71	2200	16	137	2643
post 72	12000	3000	3700	29100
post 73	10000	790	3900	23280
post 74	4400	358	630	7006
post 75	7400	676	1400	12952
post 76	7400	605	1400	12810
post 77	16000	3600	6700	43300
post 78	4200	141	384	5634
post 79	3200	610	390	5590
post 80	12000	3300	2400	25800
post 81	13000	1700	2700	24500
post 82	16000	338	6400	35876
post 83	3000	82	260	3944
post 84	10000	1800	1900	19300
post 85	9800	2400	2300	21500
post 86	2400	98	1	2599
post 87	4800	530	677	7891
post 88	4000	308	580	6356
post 89	6400	597	1100	10894
post 90	3400	338	228	4760
post 91	8000	1400	1800	16200
post 92	7400	680	1700	13860
post 93	5700	530	1100	10060
post 94	4700	380	787	7821
post 95	4800	167	712	7270

post 96	9000	1200	2000	17400
post 97	7500	629	1600	13558
post 98	4100	295	303	5599
post 99	3500	100	425	4975
post 100	5400	160	620	7580
	TL	TC	TS	Engagement score Total
	772.432	129.964	209.658	1.661.334
	Average TL	Average TC	Average TC	Average Engagement Score
	7.724	1.300	2.097	16.613

Armen Ashotyan (Republican minister)				
Posts March 31 - May 8	Likes (TL)	Comments (TC)	Shares (TS)	Post engagement (TL+2*TC+3*TS)
post 1	216	17	1	253
post 2	780	28	43	965
post 3	164	0	6	182
post 4	1100	61	19	1279
post 5	130	1	4	144
post 6	587	11	24	681
post 7	1200	55	113	1649
post 8	237	9	4	267
post 9	317	20	12	393
post 10	412	33	7	499
post 11	269	11	11	324
post 12	508	73	31	747
post 13	109	3	0	115
post 14	135	3	1	144
post 15	347	43	87	694
post 16	1000	28	29	1143
post 17	258	7	21	335
post 18	649	7	74	885
post 19	160	20	24	272
post 20	365	13	41	514
post 21	76	0	1	79
post 22	69	0	1	72
post 23	71	1	6	91
post 24	173	2	8	201
post 25	466	24	15	559
post 26	1100	53	46	1344
post 27	578	16	74	832
post 28	453	8	50	619
post 29	201	1	4	215
post 30	97	3	6	121
post 31	278	78	7	455

	Average TL	Average TC	Average TC	Average Engagement Score
	261	10	13	320

PAN.am Media (Official FB Page)				
Posts March 31 - May 8	Likes (TL)	Comments (TC)	Shares (TS)	Post engagement (TL+2*TC+3*TS)
post 1	292	68	60	608
post 2	4600	117	14	4876
post 3	1400	54	25	1583
post 4	3600	686	12	5008
post 5	3900	640	23	5.249
	TL	TC	TS	Engagement score Total
	13.792	1.565	134	17324
	Average TL	Average TC	Average TC	Average Engagement Score
	2.758	313	27	3464,8