A Systematic Literature Review of the Social Impact Theory among Young Adults on Social Network Sites

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Abstract

This paper presents a systematic literature review (SLR) on the social impact forces of number, strength, and immediacy among young adults on social media platforms. The SLR was conducted in May 2018 and focused on papers published over the last five years (2012-2017). The paper considers peer-reviewed journals, with main interest in the young adults' tendency to be influenced as they engage in online social networking. The quality criteria and contexts of the papers are also presented followed by a qualitative analysis of selected papers. Insight established through the selected papers helped observe the overall orientation and effectiveness of these social impact forces in achieving a change in behavioural outcomes among young adults, within virtual spaces.

Keyword: Social Media, Social Impact Theory, Social Threat

I. Introduction

The 'social space' has emerged as a concept, coinciding with the introduction of social impact theory (SIT) [1]. Social spaces now figure heavily in organisational development and other social-oriented government endeavours [2][3]. Ref [4] suggests that globalisation and global world economic integration are the reasons why group-based virtual methods have taken root in over 70% of global firms [5] and collaborative work has become a mainstay both inside of offices and in informal social groupings [6].

Despite the complexities and stigmas that often undermine collective efforts and social cohesion [7]. The reality is that – as social actors – human beings do not exist in isolation; we depend on openness and empathy from others, and this is integrally linked to our very survival and nature [8]. In the literature, the dependence of the individual on the group factors is described as 'social forces' and 'situational tendencies,' including social presence and group size [2][9][10][11].

II. Literature review

A. The Social Impact Theory

The Social Impact Theory (SIT) was originally proposed by Latane [12] (Table 1.0). The theory is defined as:

"the presence, actions or utterances of a group of people may result in a variety of changes in the psychological or behavioural state of a target to a great or significant extent" (p.343).

Table 1.0 Forces of Social Impact Theory and Illustration

Social Force	Explanation	Illustration on Social Media
SIT force of Number	The number of influencing sources directed at the individual or the target of influence	Numbers may be in terms of what everyone is doing on social media or the number of media posts seen regarding a public subject.
SIT force of Strength	The importance or intense character of the influencing source. This characteristic may apply to the language, tone, or personality on the media platform	Strength may depend on the context and cover factors such as age, gender, physical characteristics, and perceived intelligence or physical appearance.
		Strength may as well depend on the situation at hand – especially when the influence is coming from a political leader, actor, police or other
SIT force of Immediacy	Immediacy may refer to the proximity of the influencing source to the target being influences. To create influence, it is important to get physically, temporally or socially close to the target	Physical Immediacy – influence froma common geographic location
		Temporal Immediacy – recency of post on the platform or the duration of a post placed on social media
		Social Immediacy refers to followers of fan pages, part of group pages, likes or followers of same pages and other metrics that define closeness on social media platforms

The theory stipulates that the three main forces are in play to influence the individual's psychological and behavioural state. These forces include the social forces of strength, number and immediacy. SIT has attracted attention from diverse perspectives in applying to changes in human behaviour in offline and online environments [13][14]. Nonetheless, there is no doubt that the definition of social impact has evolved to consider how the group influence behaviour and opinions within digital social spaces. It must be added that within virtual spaces, research can easily document explore to influence, as well as the source and strengths of the influencing sources – something that was nearly only achievable through quasi- experiments in offline social environments. Focusing on social spaces, the impact of one or more of these observable forces on behavioural or attitudinal outcomes were observed as has been documented over the last half-decade.

B. Social Media and Behaviour

Social media provides grounds for collective discussions, rabid distribution of images and the mobilization of action [15][16][17][18]. This assertion is discussed in greater detail to understand how social media affects perceived behavioural control and attitude or intention to behave in a particular manner. As observed from the discussion, the possibility of social media to influence the attitude and actions has been thoroughly established and is not a new area that can be termed a research gap.

Specifically, the present study takes an interest in the influence of social media on attitudes and behaviours of users in the form of radicalization [19]. Ref [19] state that social media "*is an effective tool to use to radicalize and recruited members into a cause*" (p. 168). Social media welcomes and offers the opportunity to people who want to connect and share themselves with the rest of the world, build friendship, or increase membership in support of a cause. It offers a sense of purpose and addition that lead users to commit actions whether or not they originally intended, or they were convinced in the cause of exposure to such content [20].

With a single tweet or a series of tweets, a person may cause a chain of actions and debates on a global scale, altering attitudes and behaviours of large volumes of people. These people, on the other hand, would forward this information to their friends and audience on this platform; information will be reshared by friends and the chain continuous endlessly [21].

Social media influence on behaviour must not only be considered from a negative perspective. The equal consideration of the positive effect of social media on behaviour and attitude must be highlighted. There is no doubt that social media helped create positive attitudes and behaviours in the event of the 2010 Haitian Earthquake [22]. Managing knowledge on social media platforms provided collaborative workspaces and emergency forums where users met to share public emergency information. This significantly sped the decision-making processes and the distribution of resources to areas that need the most attention. In another case of the US 2016 elections, fake news disseminated on social media platform was observed as a significant factor that affects the voting patterns of the people within the election year [23]. The events surrounding outcome of the Brexit because, many papers have observed the effect of groups on behaviour in diverse contexts including medicine and healthcare, practical psychology, and other unrelated fields. Moreover, the observation of some form of social interaction within virtual spaces, between the influencing group or influencer and the one being influenced, was critical to classify any paper as inclusive. Based on these guiding criteria, a collation of empirical evidence from varied social sources was gathered. Other qualities and inclusion criteria are discussed in the sections that follow.

It must also be highlighted that the social impact forces of number, strength and immediacy are rather ambiguous when undefined. It was rather rare to see such exact terms being used in any of the papers online, even in the events where the paper expressly considers SIT as an underlying theory. It is only after careful consideration of the academic papers that one can infer that any paper is about the effect of strength, number, or immediacy on the behavioural or attitudinal outcome. In summary, even though studies have employed one or more components of the SIT, the lack of coherence and consolidation of the terms under these social forces has gone unattended, creating a chaotic view about on the subject of SIT forces.

After a thorough reading and a general literature search, the principal search criteria are presented in Table 2.0. Based on PRISMA guidelines, the search considered peer-reviewed journal articles, using 13 main keywords. Peer-reviewed articles allow for the most reliable scientific information, and electronic databases offer an efficient platform to collate evidence in a manner that is systematic. Additional quality criteria were adapted from varied sources as presented below.

Table 2.0 Criteria Definition

Criteria	Definition
Search Sources	Articles (Peer-reviewed)
Selection	Keywords in title and abstract (13)
	Electronic Databases (10)
Language	English
Publication Year	2012 – 2017
Quality Criteria	Clearly defined objective [37]
	Well addressed context
	Clearly stated findings
	Good rationale or significance [38]
	Research-based paper [37]
	Unique contributions of the research
	Empirical assessments and evaluations [39]
	Clearly defined limitations [40]

In line with the search strategy described, ten (10) main databases were considered to exhaust the relevant literature on the subject. The justification for using these libraries include the availability of research and peer-reviewed articles in databases, the possibility to search with keywords or an article's availability from keyword search strings, and the relevance of database on search output results.

All databases included in the systematic literature review fit these justifications (Table 3). A preliminary search was conducted to ensure that the databases were relevant to the systematic literature review. This search was documented as an initial manual search. The preliminary search was to ensure that non-relevant databases were removed. A database such as MEDLINE, for instance, had close to 30,000 hits when compiling the manual results; however, the output was of little relevance to a study that focuses on social spaces and social behaviour. Most of the papers on excluded databases did not cover the context as required.

Other databases that mainly covered newspaper collections, dissertations, eBooks and grey literature were removed from the collections. Google Scholar is not listed among the databases even though it was used as a supplementary digital bibliographic database. This ensured that all relevant studies were considered and not omitted.

Table 3.0 Database

Database	Link/ URL
ScienceDirect	http://www.sciencedirect.com
Springer Link	http://link.springer.com
Springer Open	http://www.springeropen.com
Wiley Online	http://onlinelibrary.wiley.com
SAGE	http://journals.sagepub.com
Oxford Journals	https://academic.oup.com/journals
Emeralds Insight	http://emeraldinsight.com
Ebscohost	http://search.ebscohost.com

Four (4) main keywords were originally considered, as informed by the SIT and its three main constructs. Variants of these keywords – i.e. synonyms that denote their conceptual meaning, were identified due to the lack of conceptual consensus on the terms mentioned earlier. The actual terms of 'number,' 'strength,' and 'immediacy' were not considered in the search due to their excessive ambiguity.

As part of the SLR, inclusion and exclusion criteria were set based on these parameters. Other inclusion criteria considered the identification of the keywords in an independent position. An instance is that, whether immediacy, number or strength, one of these forces may be considered an outcome of other social constructs – however, this distorts the argument of SIT as an influencing theory – the inclusion and exclusion criteria were held specific to the selection and extraction stages.

Further inclusion and exclusion criteria used implemented into the StArt program to permit automatic information extraction from the included papers. The criteria for paper quality scores were based on the presence of keywords in the title and abstract of the papers. After passing papers through sources, identification and selection stages, the extracted papers were downloaded for closer scrutinization. All selected papers must pass all the inclusion criteria, and have at least 1 social force empirically supported as improving some behavioural or attitudinal outcome.

A. Conducting the Review

On the initial manual search, a total of 1,394,894 results were collated for social impact theory as a single keyword. Approximately 5.4 million results were collated for 'strength,' 4,083,944 for 'immediacy,' and 8,543,162 for keywords used to represent 'number.' A total of approximately 19.4 million results were observed. Primarily, this justified the need to remove these keywords from the main keywords list, and consider the use of meaningful phrases; therefore, after removing irrelevant databases, the second search for literature entailed the use of the Boolean Phrase in a single search per database:

"Social Impact Theory" OR ("Strength of source" OR "Strength of followers") OR ("Social Distance" OR "Immediacy of followers" OR "Immediacy of event" OR "Immediacy of communication" OR "Source closeness") OR ("Audience size" OR "Social Group size" OR "Number of Followers" OR "Number of sources acting on target" OR "Number of people present")

Databases that did not support the phrase were manually searched using the individual phrases. The use of a single phrase was incompatible with ScienceDirect and Springer Links; for these databases, 13 separate keywords were entered into these databases. This resulted in duplicates of papers within database imports. All duplicates within databases were therefore removed before exporting sources into the StArt tool, noting that duplicates also occurred across databases.

Zotero reference management software was used during the export session to remove papers classified as grey literature and duplicates from databases. The final results from each source database were then exported into a single BibTeX file that can be opened by any text editor. The final text file for each database was imported into StArt as a single file. Unique identifiers were provided by Zotero before importation into StArt – this marked the sources stage in StArt software. A total of 1143 papers were duplicated across databases.

Following the removal of cross-database duplicates in the search stage, the selection stage commenced with 8,233 papers. At the selection stage, the exclusion was conducted

based on titles, abstracts, and keywords as popularly advised [41]. As part of the selection stage, a quantitative criteria function in StArt was set to award a score of 10 to each paper with keyword in title, 5 to each paper with keyword in abstract, and 2 to each paper with a keyword in keyword list. The highest score was 50 and lowest, 0. A paper that has none of the 13 keywords in the title, abstract and keyword list would most likely be of little relevance to the study. The scores helped rank the papers based on relevance. Screening commenced from those with high scores. A total of 1292 papers were accepted at this stage (totalling 15.69%), and 6,941 (84.31%) of the papers were ultimately rejected.

At the extraction stage of the SLR, a total of 1,292 were extracted and stored; following the extraction, 375 of these papers were published in journals with ABS 2015 3, 4, or 4* ratings. Careful reading sought to identify the following properties:

- Identification of at least one SIT Force as the main predictor or moderating factor.
- Identification of an interaction outcome [among humans] within a social context,
- Some form of quantitative empirical observation where the effect can be rationalized.

Studies with macro secondary data were excluded – at least one study considered corporate-level data and two studies considered national-level data to predict behaviour. These studies could not be analysed on the same level as individual level inter-relationships. Other studies on political and religious behaviours were maintained due to special research interest in social media implications to national security. Finally, some papers were classified as relating to the dark side of social capital [42]. These included studies on stigma towards homelessness, people with depression, alcohol dependence behaviour prediction, substance use behaviour prediction, sexual abuse, honour killings, bullying, suicide, among other vice-promoting social behaviour prediction.

III. RESULTS AND FINDINGS

The results of the SLR is presented in Table 4.0 below. A total of 4 papers were finally included. Particular interest was on studies that have incorporated students and young adults. A total of 5 papers explicitly stated that empirical attention as on students, 1 stated young adults, and four simply covered Social Network Site (SNS) users. A paper covered MTurk Members and the last paper on reviewers. The type of social media setting indicates the specific platform SIT force was being observed. Only 1 paper covered a combination of offline and online media platforms [46]. This paper was considered due to coverage of online media, but with an insightful comparison with offline platforms based on the same SIT force comparison. At least 1 study involved the use of mock twitter pages – this involves the use of Twitter but with fake accounts to mimic the presence of numbers., and observe the influence on opinion, behaviour or attitude [51]. A total of 6 out of the 12 papers tackled a unique SIT Force; five papers tackled two SIT forces, and 1 paper conducted on Facebook tackled all forces.

Table 4. SLR Results

Author	Population	Type of Social Media Setting	SIT Force in Play
Pieschl & Moll [43]	Students	SNS	Number & Strength
Chen & Ng [44]	MTurk Members	Online Media Platform	Immediacy & Strength
Feng [45]	SNS Users	Social media Platform	Number
Lev-On & Lissitsa [46]	SNS Users	Online and Offline media	Immediacy & Strength
Cheng & Ho [47]	Reviewers	Social Review website	Number & Strength
Martin & North [48]	SNS Users	SNS	Number
Jin & Phua [49]	Students	Celebrity Twitter Page	Strength
Hofer & Aubert [50]	SNS Users	Online/Twitter SNS	Number
Westerman et al. [51]	Students	Mock Twitter Pages	Number
Ledgerwood & Callahan [52]	Students	Online Opinion Survey	Immediacy
Moll et al. [53]	Young Adult	SNS	Number & Strength
Oeldorf-Hirsch et al. [54]	Students	Facebook - SNS	Immediacy, Number & Strength

A. Social Group Immediacy as a Social Force

The effect of social group immediacy as an influencing force on the individual behaviour, attitude or opinions was covered in four papers [44][46][52[54]. Among these papers, only 1 paper considered immediacy as the focal point of its investigation [52]. Whether people agree with comments posted online, did not have any influence on persuasive power even though the civility of such comments count [44]. Social media users see themselves as more distant – in terms of perceptual gap - from others who disagreed with them online. In another finding, the closeness among social actors was equally observable in offline and online spaces [46]; closeness was, however, stronger when people of the same or similar age, religiosity, education and income come together.

In one more study conducted by Ref [52], 'distance' was observed as a significant factor in social influence, with strong irrefutable difference from the influence of the SIT force of strength. In the final paper which covered all three SIT forces, Ref [54] in a study involving students observed that less consistent face-threatening Facebook is with the target's identity, the more embarrassing the target becomes.

B. Social Group Number as a Social Force

The effect of social group number as an influencing force on the individual's behaviour has been offered most attention [43][45][47][48][50][51][53][54]. Among these papers, four of them considered solely number as an influencing force in the paper [45][48][50][51]. In these observations, the disclosure of personal and impersonal information demonstrated an effect on meta-cognitive confidence judgements [43]. The size of the audience to whom the disclosure was made, significantly affects the answers respondents produced. Ref [45] also considered that the number of followers, following, and tweets generated within a given time has a strong connection with users' dependence and involvement on the social media platform.

In another supported study, it was observed that a large number of online audiences influenced consumer purchasing decisions [47]. Ref [48] also established that the propensity to offer help on social media reduced based on the number of bystanders who can assist, with specific reference to the social impact theory. Similar findings were also supported by Ref [50] and [51]; these studies regarded the influence of the number of followers and following on social media platforms, as an influence on bonding social capital, and source credibility respectively. In another observation, Ref [53] observed audience size as a critical determinant of overload heuristic – the perception of others' messages as redundant noise based on experience with information overload. Finally, it was observed that face-threatening posts are more embarrassing when the audience is large and diverse [54].

C. Strength of Social Group as a Social Force

The effect of strength of the social group as an influencing force on the individual behaviour, attitude or opinions has been covered in a number of the identified papers [43][44][46][47][49][53][54]. Among these papers, only 1 paper focused solely on strength as an influencing

force [49]. Ref [43] observed that in the event of information intimacy – ie whether information was considered personal or impersonal, respondents differed in terms of their answers. Ref [44] also observed that strength is a significant factor in terms of the civility or incivility of comments posted online and its persuasive power. Even though social media has a tremendous benefit on SIT research, Ref [46] observed that offline contract explained a deeper form of closeness than online social contracts, even though both platforms are equally supportive in terms of behaviour change.

In [47], the nature of reviews posted online – whether positive or negative – influenced consumer purchasing decision. Focusing ion celebrity Twitter page, Ref [49] also supports the assertion that the source of credibility perception has a strong influence on buying intention. Information density was also observed one SIT strength indicator with implications to overload heuristic [53]. Finally, Ref [54] observed that a post that contains face-threatening information directed at a particular target's identity is likely to cause embarrassment than a post that does not target the identity of the individual.

IV. DISCUSSION AND CONCLUSION

Online environment leaves traces of interactions and social engagement. The SIT has, therefore, become more useful within the context of social media and other virtual spaces than offline could ever achieve. The trend and gradual increase in the application of SIT to online and other virtual spaces was witnessed in the stream of literature generally observed from the year 2000 to 2017. Studies that focused on offline environments had no to little substance in terms of empirical backing. Others who resort to offline quasi-experiments had so many criticisms to counter since the social environment cannot be completely by research like strict natural experiments.

The contribution of SIT to attitude, behavioural change, and opinion have been documented. Many of these documentations and scholarly work, however, do not pay express attention to the theory of SIT per se. The papers that pay attention to the theory of SIT do not necessarily consider all three sub- components of the theory in their empirical assessment. This led to the original perception that SIT, per se, has not gained popularity in the available literature. Nonetheless, the present SLR takes into consideration social studies that hypothesize the contribution of group characteristics to individual behaviour, without reference to whether or not the theory was expressly mentioned. This observation indicates that SIT research may date well beyond the formal introduction of the theory [12], since the prediction of behaviour as being influenced by specific group factors, goes far into the distant past of behavioural research.

The evidence presented in the present SLR indicates that all three SIT forces have gained relevance in predicting behavioural change within the context of SIT. Whereas the social force of number can be easily distinguished, the forces of immediacy and strength have often remained inter-linked. This observation may be traced to the very definition of these terms and the origin of the theory [12]. Ultimately, a strong and positive

correlation exists between strength and immediacy of SIT forces. In some events such as Ref [52], this observation was made clear with empirical support.

Further work on this area would be required to identify the direction of the effect using quantitative meta-analytical techniques. All the 12 papers considered in the present study involved quantitative results that indicate a directional effect of SIT on one or more behavioural outcomes; inputting this data into a reliable meta-analysis program will help arrive at the overall directional effect and prove rather experimental in support of SIT. It will also help arrive at a more specific conclusion using quantitative evaluation to cement all evidence that has been presented in support of SIT.

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