**Surveying the Australian General Public’s Attitudes towards Personal Data on Facebook**

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**Abstract**

During March of 2018, a Cambridge Analytica-employed contractor reportedly gained unauthorised access to personal data stored on Facebook servers (Lapaire, 2018). Using a ‘scraping program’, Aleksandr Kogan obtained the personal data of approximately 87-million Facebook users (Lapaire, 2018; Lotrea, 2018). This data was later lawfully sold to Cambridge Analytica and used to create detailed profiles of Facebook users’ identities. Zuboff (2015) states the instigator for legislative change rectifying deficiencies allowing such happenings is the general public’s understanding of commodifying identity as threatening to privacy. The United States of America and the European Parliament heard requisite testimonies by Mark Zuckerberg regarding these events, but Australia did not. The alternate attitudes towards personal data on Facebook within Australia gave merit to the current study’s likewise investigation. A 25-item attitudinal questionnaire was administered via a Qualtrics survey to a snowball sampling of 65 participants. Via exploratory factor analysis the remaining 19-items which comprised the tool labelled the ‘Commodi-5’ was deemed valid for use with participants and similar populations. Additionally, the tool was deemed appropriately reliable via Cronbach’s reliability coefficient. Significance testing of the recorded data demonstrated participants desired the legislative change which Zuboff (2015) describes; however, legislative change has not yet occurred in Australia. This study proposes this may be because the attitudes possessed by the Australian general public are not uniform to those possessed by appointed officials. The implications of which should be the focus of future research.

**Surveying the Australian General Public’s Attitudes towards Personal Data on Facebook**

Cambridge Analytica-employed contractor Aleksandr Kogan reportedly used a ‘scraper program’ to obtain personal data from approximately 87-million Facebook users’ webpages (Lapaire, 2018; Lotrea, 2018). Programs granting individuals third-party access to personal data available online have existed since before Facebook’s inception, but have accumulated negligible public, media, or political outcry. Nonetheless, when personal data stored on Facebook servers were demonstrated as harvestable and tradable commodities, Facebook’s data practices became topical within media, politics, and public (Lapaire, 2018; Smith, 2018; Turner, 2018; Zimmer, 2010). Though, such discourse is largely misguided as focus remains predominantly on Facebook’s personal data handling, and not the security of its servers. While Facebook’s personal data handling is uncircumspect, the current study follows events reported by the *New York Times* and *The Guardian* during March of 2018.

Using the free ‘thisisyourdigitallife’ application, Aleksandr Kogan gained access to application users’ Facebook data, as well as the data of their Facebook friends and associates (Lapaire, 2018; Lotrea, 2018). The obtained data were then transferred to Cambridge Analytica, a political consulting firm which reportedly used the data to aid political campaigns predict voter behaviour (Lapaire, 2018). Aleksandr Kogan’s capacity to access and obtain Facebook users’ related-personal data is nonetheless the intended function of Facebook’s patented *application programming interfaces* (API) (Riley, 2019; Turner, 2018; United States Patent No. US 9189819B2, 2015). API are “… interfaces implemented by a software program [Facebook] that enables it [Facebook] to interact with other [third-party] programs” (United States Patent No. US 9189819B2, 2015), such as ‘thisisyourdigitallife’.

That is, third-party application developers access users’ Facebook data through API with defined parameters for data exchanges between third-party applications and Facebook (United States Patent No. US 9189819B2, 2015). Consequently, tools called *scraper programs* are used to search programs like Facebook through API, collect data, observe users’ real-time behaviour, and then compile gathered information (Lapaire, 2018). During these data scraping processes, embedded metadata is also obtainable (Lapaire, 2018). Metadata being data embedded within all data created within or inputted to computers, but not semantically related to data it is embedded within (Read, Chbeir, & Dipanda, 2013). As such, likes, comments, photos, and videos uploaded to Facebook may have embedded metadata describing the upload date, location, time, and user’s legal name (Read et al., 2013).

Consequently, metadata can be used as a mechanism for interpreting and organising data, as well as describing relationships amongst available compiled information (Lapaire, 2018; Read et al., 2013). These processes are categorized as ‘data mining’. For example, Cambridge Analytica reportedly data mined metadata scraped from Facebook by Aleksandr Kogan to create detailed documents describing the respective persons’ identities and behaviours (Lapaire, 2018). The revelation eventuated in Facebook’s Chief Executive Officer (CEO), Mark Zuckerberg’s requisite testimony under oath before the United States of America (USA) Congress and European Parliament (Dogruel & Jockel, 2019; Lapaire, 2018). Though, due to deficiencies in the questioning parties’ grasps of Facebook generally, neither testimony implicated Facebook’s protection of users’ related-personal data from third-party access (Deeks, 2019; Lotrea, 2018).

Moreover, no testimony from Facebook’s CEO was required or given within Australia. This is because of alternative regulations of personal data within Australia wherein neither Facebook nor Cambridge Analytica’s behaviours were unlawful. Specifically, these practices do not infringe limited personal data legislation within Australia, including the *Privacy Act 1988*‘s (Cth) 13 ‘Australian Privacy Principles’ (APP). Moreover, the APP entirely omit references to metadata (Eckstein et al., 2018). Consequently, within Australia personal data stored on Facebook servers within embedded metadata are obtained and traded as commodities without government oversight (Eckstein et al., 2018; Nyoni & Velempini, 2015; Lapaire, 2018). Furthermore, the 13 APP regulate processes of harvesting personal data within Australia, but do not regulate what those processes can be. As such, the Office of the Australian Information Commissioner’s (OAIC) aims related to implementing larger fines and further enforcing existing laws and regulations are redundant (Australian Government, 2019).

Additionally, under the *Telecommunications (Interception and Access) Amendment (Data Retention) Act 2015* (Cth), Australian residents’ two-year related-metadata stores, which internet service providers (ISP) are compelled to maintain, are readily accessed by authorised government agencies. As such, The Act allows authorised agencies to access stored metadata constituting personal data, or ‘personal information’ as it is defined within Australian law. Under s. 6 of the *Privacy Act 1988*, personal data is recorded or unrecorded information which is factual or fictitious and can be used to identify an individual. Also, under s. 187LA of the *Telecommunications (Interception and Access) Act 1979*, personal information includes any information related to an individual or an individual’s communication. These definitions preclude ascribing ownership to personal data, meaning personal data largely eludes lawful ownership within Australia. Such alternative or lax regulations of personal data security and privacy by the Australian Government is likely indicative of the general public’s attitudes.

Zuboff (2015) states the use of personal data for profit, whether unknowingly scraped or willingly collected, constitutes a new form of information capitalism labelled ‘surveillance capitalism’. Surveillance capitalism is the creation of revenue or establishment of market control via predicting and then modifying human behaviour (Zuboff, 2015). Surveillance capitalism supposedly manifests from legislative deficiencies which lag alongside individual understandings yet to identify commodifying identity as threatening to personal data privacy. That is, when the majority of a nation’s constituents, or the general public, regard commodifying identity as threatening, legislative corrections will be implemented. Commodifying identity being the transformation of identity and facets such as behaviour into monetarily valued products (Zuboff, 2015) via processes like data mining metadata for personal data.

Value therein ascribed to metadata within surveillance-capitalism-oriented private sectors relates to its abundance and capacity to derive information descriptive of human behaviour (Lapaire, 2018; Read et al., 2013; Zuboff, 2015). This is because such information may thereafter be used to predict and modify human behaviour. For example, Cambridge Analytica’s reported attempts to predict voter behaviour would lead to efforts of modifying such behaviour (Lapair, 2018). The political outcomes of which are not pertinent to the current study, but possible ramifications of targeted modification of Australian residents’ behaviour is. That is, whether acknowledged or not, Facebook functions as the world’s largest metadata node, accessible and harvestable by third-parties for such use. While all websites automatically generate metadata, Facebook offers anonymous third-parties the mass-collection-related conveniences of such data being stored and traceable to users’ personal-information-abundant profiles.

Other social networking sites (SNS) offer similar profile-related conveniences to Facebook, but none maintain an active user population greater than Facebook’s (Alzougool, 2018). Moreover, concurrent to this study Facebook had no discernible policies addressing protection or concealment of individuals’ related-personal data from third-party access (Facebook, 2018a). As such, the personal data privacy of all Australian residents is threatened because Facebook’s policies are also not prohibitive of non-user-related personal data uploads (Facebook, 2018a; 2018b). For instance, Facebook’s (2018a; 2018b) ‘Data Policy’ waives the organisation’s accountability for privacy and security of users’ uploaded personal data, stating such onus rests with users (Facebook, 2018a). Additionally, Facebook’s (2018b) seven ‘Privacy Principles’ state the organisation actively sells, trades, and transfers user-related metadata as commodities either directly or indirectly for profit (Nyoni & Velempini, 2015). As such, Facebook facilitates third-party developers’ ascertainment of personal information for transforming as commodities used to predict and subsequently modify behaviours of Australian residents.

The current research aims to address five research questions related to the Australian general public’s attitudes towards personal data on Facebook. Attitudes, as opposed to other phenomena such as beliefs, concerns, or perceptions are the primary focus of the current study. This is because unlike other phenomena, an attitude can be straightforwardly defined as an expression of desired behaviour (Likert, 1974). That is, attitudes express an individual’s desires related to behaviours involving personal data on Facebook, such as legislative change (Zuboff, 2015), whereas other psychological phenomena do not. The current research questions are as follows: 1) ‘what attitudes do the Australian general public possess towards personal data security on Facebook?’; 2) ‘what attitudes do the Australian general public possess towards personal data privacy on Facebook?’; 3) ‘what attitudes do the Australian general public possess towards the commodification of personal data?’; 4) ‘what attitudes do the Australian general public possess towards metadata generated while using Facebook?’; and 5) ‘what attitudes do the Australian general public possess towards Facebook’s personal data policies?’

**Literature Search Strategy**

The reviewed literature were sourced from ‘Google Scholar’ and the Royal Melbourne Institute of Technology’s (RMIT) ‘Online Library’. Automated searches with predetermined search terms were utilised to retrieve materials for review. Additionally, manual searches with non-predetermined search terms were utilised to retrieve additional materials relevant to the review, but not retrieved during automated searches. Google Scholar and RMIT’s Online Library were used primarily because both search engines allowed ‘cross-searching’, or searching across multiple online databases. This includes databases such as ‘Austlii’, ‘Elsevier’, ‘Factiva’, ‘HeinOnline’, and ‘SAGE’. Additionally, Google Scholar and RMIT’s Online Library were used because both search engines allow ‘advanced’ search options which refine retuned results. All five research questions relate fundamentally to attitudes towards personal data on Facebook; however, as the context of these attitudes varies, a separate search was conducted for each research question. This returned results more pertinent to each specific question and related attitudes, as opposed to results with superfluous contents superficially relating to the subject matter.

**Search one.**

To return results pertinent to attitudes towards personal data security on Facebook, four key search terms were inputted to Google Scholar and RMIT’s Online Library. These were: 1) ‘attitudes’, 2) ‘Facebook’, 3) ‘data’, and 4) ‘security’. ‘Australia’ and ‘personal’ were removed as search terms after initial searches because too few results were returned. Advanced search options were utilised within Google Scholar and RMIT’s Online Library. These options returned only the results with search terms 2, 3, and 4 in the title, and search term 1 anywhere within the document’s contents. *Search one* returned a collective 10 unique results.

**Search two.**

To return results pertinent to attitudes towards personal data privacy on Facebook, three key search terms were inputted to Google Scholar and RMIT’s Online Library. These were: 1) ‘attitudes’, 2) ‘Facebook’, and 3) ‘privacy’. Again, ‘Australia’ and ‘personal data’ were removed as search terms after initial searches because too few results were returned. Advanced search options were utilised within Google Scholar and RMIT’s Online Library which returned only the results with all search terms in the title. *Search two* returned a collective 14 unique results.

**Search three.**

To return results pertinent to attitudes towards commodifying identity, a multitude of initial searches were performed. Inputting four key search terms into Google Scholar and RMIT’s Online Library was the most successful search. These terms were: 1) ‘attitudes’; 2) ‘personal’; 3) ‘data’; and 4) ‘commerce’. ‘Commodification’, ‘commodifying’, ‘identity’, ‘Australia’, and ‘Facebook’ search terms were removed during initial prototype searches because no results were returned. Advanced search options were utilised within Google Scholar and RMIT’s Online Library which returned only results with all search terms in the title. *Search three* returned a collective one unique result.

**Search four.**

To return results pertinent to attitudes towards metadata, two key search terms were inputted to Google Scholar and RMIT’s Online Library. These were ‘attitudes’ and ‘metadata’. Search terms ‘Australia’ and ‘Facebook’ were removed after initial searches because too few results were returned. Advanced search options were utilised within Google Scholar and RMIT’s Online Library which returned only results with all search terms in the title. *Search four* returned a collective five unique results.

**Search five.**

To return results pertinent to attitudes towards Facebook personal data policies, a multitude of initial searches were performed. No combinations of search terms were successful. For example, five key search terms were inputted to Google Scholar and RMIT’s Online Library. These were: 1) ‘attitudes’; 2) ‘Facebook’; 3) ‘personal’; 4) ‘data’; and 5) ‘policies’. Advanced search options were utilised within Google Scholar and RMIT’s Online Library which returned only results with all search terms in the title. *Search five* returned zero unique results.

**Selection Criteria and Evidence Validity**

From these automated searches, 30 results were retrieved, and another 12 were subsequently retrieved from manual searches. Manual searches involved identifying authors commonly cited amongst automated search materials and retrieving published materials from those authors relevant to the current review. Checks of credibility for the collective 42 results were conducted using inclusion and exclusion criteria. Results such as original peer-reviewed studies, government reports, literature reviews, and meta-analyses were considered for inclusion. Conversely, grey materials of non-peer-reviewed or published quality such as media articles and company websites were excluded. Results which could not be accessed or were without English translations were also excluded. Materials were not excluded per publishing date because there was no logical reason for doing so. After inclusion and exclusion criteria, six results remained from ‘*search one*’, five results remained from ‘*search two*’, one result remained from ‘*search three*‘, five results remained from ‘*search four*’, and 12 results remained from manual searches. Checks of validity included briefly reading the documents, as well as scanning titles and summaries or abstracts for relevance to the current research questions. Subsequently, 14 collective results remained from both automated and manual searches. This included five results from ‘*search one*’, four results from ‘*search two*’, and two results from ‘*search four*’.

**Critical Appraisal of Studies**

Of the remaining 14 materials 13 were quantitative studies. The contents of these 13 quantitative studies were critically appraised via the ‘Quality Assessment Tool for Quantitative Studies’ (QATQS) (Effective Public Health Practice Project, 1998a; 1998b). While the QATQS was devised for analysing public health studies, all six ‘component ratings’ or subscales allow an analysis of quantitative studies generally (Jackson & Waters, 2005; National Collaborating Centre for Methods and Tools, 2017). Subscales included 1) ‘selection bias’; 2) ‘study design’; 3) ‘confounders’; 4) ‘blinding’; 5) ‘data collection method’ and 6) ‘withdrawals and dropouts’ (Effective Public Health Practice Project, 1998a). The QATQS Dictionary guides scoring of subscale and composite or ‘global’ ratings as either ‘weak’, ‘moderate’, or ‘strong’ (Effective Public Health Practice Project, 1998). No studies were identified which tested the QATQS’s reliability amongst attitudinal research, but interrater agreement has been utilised to do so within other fields.

Interrater agreement refers to statistical procedures which quantify how close multiple evaluators’ scores of the same phenomena are to one another (Quarfoot & Levine, 2016). As Quarfoot and Levine (2016) state, this is distinguished from interrater reliability, or statistical procedures which quantify how close one evaluator’s scores of the same phenomena are when measured at different times. For use with public health intervention studies, the QATQS was deemed as demonstrating appropriate interrater agreement as measured by Cohen’s kappa statistic (*k* = .74) (Thomas, Ciliska, Dobbins, & Micucci, 2004). Though, Thomas et al. (2004) did not report confidence interval (CI) statistics. For use with cancer pain management studies, QATQS global rating was also deemed as demonstrating appropriate interrater agreement calculated by intra-class correlation coefficient (ICC) (ICC = .77, 95% CI [.51-.90]) (Armijo-Olivo et al., 2012). As demonstrated by Table 1.1 and Table 1.2, all currently reviewed studies were assessed as ‘weak’ via QATQS global rating. No studies were excluded from review based on QATQS-determined quality, however, as the studies may still possess important findings.

**Review of the Literature**

An individual, in context of historical mishandling of privacy within that individual’s nation, may not understand why they should protect their personal data privacy. This notion was conceptualised by Budak, Anic, and Rajh (2013) in relation to Croatian residents. Specifically, Budak et al. (2013) conceptualised Croatian residents’ attitudes towards personal data privacy reflect Croatia’s historical existence as a governed entity of Yugoslavia. Prior to Croatia’s independence from Yugoslavia in 1991, Croatian residents were reportedly required to provide identifying documents to government officials upon request. Following independence from Yugoslavia, however, similar personal data is protected by Croatian Law alongside human rights as fundamental freedoms. Via semi-structured interviews with two Croatian experts, Budak et al. (2013) aimed to explore the Croatian general public’s attitudes towards personal data privacy.

These individuals were described as possessing expert opinions on Croatian data protection, internet security, and privacy perceptions. Budak et al. (2013) discerned from these experts’ anecdotes that Croatian residents’ identifying documents were ongoingly and wilfully provided upon request, irrespective of personal data protections. This led Budak et al. (2013) to surmise the Croatian general public do not understand why they should protect their personal data privacy. Further, Budak et al. (2013) implies this lack of understanding perpetuates from historical mishandling or privacy within Croatia during its existence as a governed entity of Yugoslavia. Budak et al.’s (2013) concept is explicitly stated, but not explored further in any way. As such, the nuances of this ignorance towards privacy concept will be explored in relation to other relevant literature with context for Australia.

This is because similar inferences can be made about the Australian general public. Contemporary Australia has comparable lack of protection for personal data privacy to pre-independence Croatia, meaning residents are evidently vulnerable to identity commodification. Moreover, in comparison to Croatia, Australia has not sought independence from the British Government which established the land as a British penal colony in 1788 (Anderson, 2016). As such, the Australian general public’s privacy has been stifled both historically as a British penal colony and contemporarily via government surveillance. The lack of action within Australia towards Facebook’s facilitation of identity commodification is thereafter consistent with Australia’s mishandling of personal data privacy. That is, given no testimony from Facebook’s CEO was required or given following 87-million Facebook users’ related-personal data being reportedly scraped. As such, it is reasonable to suggest the Australian general public are also ignorant towards privacy.

Consequently, there is also sparse academic discussion of personal data privacy within Australia. Kininmonth, Thompson, McGill, and Bunn’s (2018) research aimed to test two hypotheses relevant to the current study: 1) ‘privacy concerns regarding government collection of personal data will positively influence privacy protections’; and 2) ‘privacy concerns regarding secondary use of personal data by government agencies will positively influence privacy protections’. This was in response to ongoing government surveillance in Australia via the *Telecommunications (Interception and Access) Amendment (Data Retention) Act 2015*. The study comprised a snowball sampling of 100 self-reported Australian residents. Snowball sampling refers a method of participant acquisition wherein individuals pass information necessary for partaking in a research project onto persons with which they associate (Goodman, 1961). This lessens sampling control and may introduce sequestered response homogeneity error, but this is inevitably possible even within samples of an entire targeted population.

The administered questionnaire was deemed appropriately reliable and valid for use with participants via Cronbach’s reliability coefficient and an unreported factor analysis respectively. As such, Kininmonthth et al.’s (2018) unnamed questionnaire would likely measure persons’ self-reported concerns consistently and as intended within similar populations. Spearman (1904) devised factor analyses to quantify the likelihood that correlating variable groups measure desired phenomena. Cronbach (1951) devised the reliability coefficient to quantify the likelihood of phenomena being measured consistently without need for successive testing with the same sample; however, successive testing is still preferable (Cronbach, 2004; 1951). Pending successive testing, Cronbach’s reliability coefficient values higher than .5 observed within the current research will be tentatively deemed appropriately reliable. That is, given Cronbach’s (1951) reliability coefficient is calculated between 0 and 1. While other estimates for judging Cronbach’s (1951) reliability coefficient exist, this straightforward estimate is preferential to the variability of studied phenomena within the literature.

Kininmonthth et al.’s (2018) administered questionnaire comprised five scales altered from previous studies not relevant to the current research questions (Dinev et al., 2008; Seigrist, Earle, & Gutscher, 2003; Smith, Milberg, & Burke, 1996; Trudinger & Steckermeier, 2017). Participants’ mean scores demonstrated concerns for government collection and improper access of Australian residents’ personal data were high. Conversely, privacy concerns for secondary government use of personal data were low. This demonstrates participants are concerned about the Australian Government collecting Australian residents’ personal data, but either: a) are not concerned if secondary government use of Australian residents’ related-personal data occurs; or b) do not believe the Australian Government would partake in secondary use of Australian residents’ related-personal data. In either circumstance, this supports the actuality of an ignorance for privacy concept within Australia. That is, low concern for government mishandling of personal data obtained via surveillance legislation suggests an ignorance for privacy.

Also, utilising structured equation modelling, Kininmonth et al. (2018) demonstrated privacy concerns for government collection of personal data did not statistically significantly influence privacy protection protocols. Privacy concerns for secondary government use, however, statistically significantly positively influenced privacy protection protocols. This means participants concerned about secondary government use of personal data were statistically significantly more likely to implement more personal data protection protocols than participants without such concerns. Collectively, these findings evidence disassociation between participants’ concerns and their behaviour. This is because concern for secondary government use of personal data influenced privacy protection protocols, whereas concern for government collection did not.

Conceptually, if participants’ concerns for government collection were representative of the Australian general public, this concern has not eventuated in civil action against ongoing government surveillance. As such, concern is likely not the correct phenomena to gauge the Australian general public’s ignorance for privacy. The same deductions can be inferred from the Australian Government’s (2018) study. The Australian Government’s (2018) sampling method was not reported, meaning sampling control and influence of the researchers on participants’ responses is ambiguous. For example, it cannot be discerned if participants were obtained based on demographical variables which incline homogeneous responses heterogenous to the Australian general public.

Nevertheless, within the sample of 1,800 self-reported Australian residents, the Australian Government (2018) aimed to explore the Australian general public’s attitudes towards personal data privacy. Participants’ responses were recorded utilising an unreported questionnaire via either telephone or online surveying. The validity, reliability, and theoretical frameworks which describe the administered questionnaire were also not reported. As such, the likelihood of the administered questionnaire functioning consistently or as intended cannot be discerned. Still, the Australian Government’s (2018) and Kininmonth et al.’s (2018) studies were the only identified materials which reported sampling Australian residents.

As such, the Australian Government’s (2018) findings provide otherwise scarce evidence regarding Australian attitudes towards identity commodification and metadata generally. For instance, only 29% of participants indicated believing all websites collect information about users. Additionally, most participants (84%) indicated believing non-consensual use of their related-personal data for monitoring persons constitutes ‘misuse’. This suggests most participants were likely unaware all websites automatically generate metadata from which personal data can be data-mined for subsequent misuse. Moreover, there is no liable legal penalties within Australian law if such misuse occurs. Furini and Tamanini (2015) also found most participants within an essentially nondescript sample were self-reportedly either angered or discomforted when shown similar misuse is possible.

The Australian Government’s (2018) sample again demonstrated dislike for monitoring of their behaviour with most (68%) participants indicating discomfort towards websites retaining databases of online activity. Accordingly, the largest proportion (32%) of the Australian Government’s (2018) participants indicated believing online services and SNS posed the greatest threat to Australian residents’ personal data privacy. Similarly, Ionescu, Anghel, and Jinga’s (2014) findings within a nondescript sample indicated only 4% of participants believed Facebook does not misuse users’ related-personal data. Moreover, the consensus within the identified literature is indicated concern for privacy whilst using Facebook (Ghosh & Singh, 2016; Mathiyalakan, Heilman, & White, 2014; Pinchot & Paullet, 2012). Though, only 1% of the Australian Government’s (2018) sample indicated believing data mining processes pose the greatest threat to Australian residents’ related-personal data privacy.

This evidences, alike Kininmonthth et al.’s (2018) findings, lacking understanding within Australia for Facebook’s facilitation of identity commodification as threatening to personal data privacy. Specifically, concerns for privacy and monitoring of individuals via aggregated metadata is evidenced; however, few individuals perceived processes such as data mining which facilitate monitoring persons as threatening (Australian Government, 2018; Ghosh & Singh, 2016; Mathiyalakan et al., 2014; Pinchot & Paullet, 2012). This may occur, as Pitkanen and Tuunainen (2012) as well as Mathiyalakan et al. (2014) suggest, because persons believe personal data is protected by Facebook. This is despite Facebook’s personal data policies stating onus for protection rests with users (Facebook, 2018a).

Pitkanen and Tuunainen‘s (2012) study elaborated on this notion, aiming to explore ‘what impact do attitudes towards Facebook’s privacy policies have on users’ personal data disclosure?’ Though, data necessary to explore this research question was not recorded. Pitkanen and Tuunainen (2012) obtained a snowball sampling of 210 Facebook users aged predominantly between 18 and 30 years of age (88%). An unnamed 30-item questionnaire developed specifically for the research was administered, with reliability and validity unaddressed. As such, mean scores of participants only indicated Finnish Facebook users may of believed Facebook protects their related-personal data. Though, 72.86% of participants also indicated unawareness towards Facebook sharing users’ related-personal data with third parties. These paradoxical findings suggest concerns for privacy on Facebook (Australian Government, 2018) result from lacking understandings for Facebook’s personal data policies, but co-exist with Facebook use.

Specifically, while persons may perceive SNS use as threatening to privacy, this is likely not based solely on Facebook’s lacking protection of personal data (Australian Government, 2018). Moreover, the belief that Facebook protects personal data may be more predominant among younger persons such as those which comprised Pitkanen and Tuunainen’s (2012) sample. That is, such beliefs may inhibit younger persons’ understanding of personal data privacy and security threats associated with Facebook’s personal data policies. Other influences may include the perception of Facebook as a social pastime which users suppress their reprehensions to partake in. For example, Bakan (2018) argued SNS users dispel their privacy concerns whilst disclosing personal data to other SNS users for hedonic benefits.

These hedonic benefits were previously categorized by Church, Thambusamy, and Nemati (2017) as either social capital or reciprocal personal data exchanges. Bakan (2018) aimed to explore Church et al.’s (2017) hedonic benefit exchanges amongst a convenience sampling of 568 students from various unreported secondary schools. The only demographical information describing the sample were participants’ age, sex, and year of secondary schooling. Consequently, discussion of the sample’s relevance to a nation, and therefore contextualising these findings in relation to Australia is inhibited. Nonetheless, participants were administered an unnamed 36-item questionnaire deemed appropriately reliable via Cronbach’s reliability coefficient, but validity of the questionnaire was not addressed. As such, Bakan’s (2018) administered tool will likely measure phenomena consistently with similar samples, but it is not known if these phenomena are intended or distinguishable.

A one-way analysis of variance (ANOVA) and Tukey Honesty Significant Difference (HSD) multiple comparisons were used to test for statistically significant mean score differences between subsamples. Participants who indicated using Facebook for news-related information demonstrated statistically significantly lower privacy concern mean scores than participants who reported using Facebook for other reasons. This does not necessarily support the notion stating Facebook users disclose their related-personal data for hedonic benefits. Rather, this means participants who used Facebook to ‘keep up with news events’ (25.7%) may have been statistically significantly less concerned about their privacy on Facebook.

Though, these participants are not necessarily less risk-adverse than persons who use Facebook for other reasons, such as ‘uploading photos, videos and, links’ (11.1%). That is, previous studies concur (Calbalhin, 2018; Pinchot & Paullet, 2012) no Facebook settings prevent third-party API access to personal data stored on Facebook servers. This is because online personal data disclosure and privacy setting practices are inconsequential to personal data embedded within metadata automatically generated on all websites (Calbalhin, 2018; Pinchot & Paullet, 2012). Still, Bakan’s (2018) findings suggest reasons for Facebook use influence understanding Facebook’s personal data policies as threatening to personal data privacy.

Tsay-Vogel, Shanahan, and Sinoreilli’s (2018) findings suggest time spent on Facebook is also a compounding variable. Referring to Cultivation Theory, Tsay-Vogel et al. (2018) argued alike excessive television viewing, excessive viewing of personal data disclosure on Facebook inhibits associated threat perception (Gerbner, 1969). Subsequently, Tsay-Vogel et al. (2018) hypothesised ‘Facebook use is associated with decreased perception of a) threats to general privacy and b) threats to online privacy’. The cross-sectional study comprised a convenience sampling of 2,714 USA Facebook users enrolled in undergraduate courses at an unreported university. The sample was aggregated over five years spanning 2010 through 2015 within similar time frames and university courses. A questionnaire developed specifically for the research was administered after being deemed appropriately reliable via Cronbach’s reliability coefficient. The validity of the unnamed questionnaire was not addressed. An unreported statistical procedure demonstrated Facebook use was statistically significantly associated with decreased threat perception for privacy generally, as well as online. This means persons who indicated using Facebook less may have been statistically significantly more likely to perceive Facebook as a threat to privacy.

This supports Mishra, Draus, Leone, and Caputo’s (2012) previous findings suggesting concern for privacy on Facebook decreases with continued use. Though, Mishra et al.’s (2012) study was not a true longitudinal design because concerns were measured pending participants’ recollection as opposed to concurrently over time. Tsay-Vogel et al. (2018) also conducted a one-way ANOVA demonstrating statistically significant differences in privacy perceptions across the five-year data collection period. An unspecified multiple comparisons demonstrated 2015 mean scores on all privacy subscale were statistically significantly higher than those in 2010. This does not support the notion stating substantial exposure to personal data disclosure on Facebook inhibits users’ perception of threats associated with such behaviour. Moreover, the validity of this finding is arguable.

This is because Tsay-Vogel et al.’s (2016) unspecified multiple comparisons procedure tested a priori hypothesis, whereas planned contrasts were developed for use with priori hypotheses. Multiple comparisons adjust for familywise error rate, and as such increase likelihood of accepting a false null hypothesis. Consequently, Tsay-Vogel et al.’s (2018) non-reporting of a multiple comparisons procedure indicates data dredging, or more specifically ‘data hunting’ (Selvin & Stuart, 1966). Data hunting is essentially exploring or manipulating data to derive a statistically significant finding whilst not reporting other non-significant endeavours (Selvin & Stuart, 1966). Nonetheless, Tsay-Vogel et al.’s (2018) and Bakan’s (2018) findings suggest persons who use Facebook less-often and less-sociably exhibit higher concerns for privacy on Facebook. As such, less frequent and social Facebook use may increase understanding of Facebook’s personal data policies as threatening to personal data privacy.

Kezer, Sevi, Cemalcilar, and Baruh (2016) aimed to discern if age influenced how sociable individuals were on Facebook. That is, Kezer et al. (2016) retroactively argued Wrzus, Hanel, Wagner, and Neyer’s (2013) findings evidence Socio-Emotional Selective Theory (SEST) as a theoretical framework for exploring SNS use. SEST states as persons age, emotional desires related to intimate relationships take social precedence and casual relationships purposefully stagnate. Accordingly, Kezer et al.’s (2016) study aimed to explore ‘what differences exist between age groups in terms of personal data privacy?’ The study comprised a convenience sampling of 600 online panel members ascertained from ‘ClearVoice Research’. The Multidimensional Privacy Orientation Scale (MPOS) was administered to participants, and deemed appropriately reliable via Cronbach’s reliability coefficient and valid through factor analysis. Independent samples *t*-tests demonstrated statistically significant mean score differences between participants aged between 18 to 40-years of age and those above 40-years of age. Specifically, participants between 18 to 40-years of age were statistically significantly more likely to use Facebook for social interaction and social curiosity.

Moreover, a one-way ANOVA followed by a Games-Howell multiple comparison was also conducted. Data necessary to discern if Games-Howell multiple comparisons were utilised because of violated equality of variances assumptions (Games, Keselman, & Rogan, 1981) were not reported. Games-Howell multiple comparisons demonstrated participants over 40-years of age were statistically significantly more likely to believe personal data security depended upon persons protecting the privacy of others. These findings somewhat support Kezer et al.’s (2016) theoretical premise as younger participants were more likely than older participants to seek social experiences. Though, older persons’ stagnant socialising is arguably consequential to developed understanding of Facebook use-associated privacy forbearances, and not casual relationships losing social priority. Therein suggesting younger Australian residents may also be more likely to be ignorant towards personal data privacy. Though, Kezer et al. (2016) only reported participants’ age, education, reasons for Facebook use, and sex. As such, the implications of Kezer et al.’s (2016) findings in context of the Australian general public is somewhat ambiguous given participants’ national residencies were not reported.

This was thematic within the current review of the literature, as the majority of identified quantitative materials did not report participants’ national residencies, nationalities, or citizenships. Moreover, as initially demonstrated by the Quality Assessment Tool for Quantitative Studies (Effective Public Health Practice Project, 1998a; 1998b) identified materials were generally of poor quality. Examples of poor quality within the identified materials included: a) unreported theoretical or conceptual premises for the respective studies (Australian Government, 2018); b) research questions or hypotheses not aligned with the research (Pitkanen & Tuunainen, 2012); c) failure to address either reliability or validity of tools administered to participants (Bakan, 2018); d) unreported sampling methods (Furini and Tamanini, 2015); e) unjustified use of statistical procedures (Kezer et al., 2016); and f) arguably inappropriate use of statistical procedures indicative of data hunting (Tsay-Vogel et al., 2018). Though, scarcity of materials which outright address Australia necessitates inferences between these such materials and the Australian general public.

Pinchot and Paullet (2012) as well as Calbalhin (2018) concur extent of Facebook use is inconsequential to personal data privacy on Facebook. This is because API allow third-party access to Facebook-generated metadata which can be data mined for personal data (United States Patent No. US 9189819B2, 2015). Though, findings such as Bakan’s (2018) and Tsay-Vogel et al.’s (2018) indicate persons perceive more or less Facebook use as correlated to chance for personal data mishandling. This may be because older persons are more understanding of threats associated with Facebook’s lax personal data policies. Specifically, older persons seemingly use Facebook less because they perceive greater use of Facebook as also being more risk adverse (Kezer et al., 2016).

As such, concern for personal data privacy on Facebook decreases with age because older persons believe they are becoming more threat-aware, and therefore less risk adverse via using Facebook less (Kezer et al., 2016; Mishra et al., 2012). Consequentially, younger persons seemingly believe Facebook protects users’ related-personal data and older persons believe privacy is dependent on individuals protecting the data of others (Pitkanen & Tuunainen, 2012). As such, these findings support Zuboff’s (2015) notion purposing individuals eventually understand commodifying identity as threatening to personal data privacy. That is, older individuals seem less ignorant towards privacy than do younger persons. Though, the identified literature focuses predominantly on phenomena not related to the desires for behaviour. Specifically, the Australian general public’s concerns for Facebook and Australian Government misuse of residents’ related-personal data are seemingly not related to likewise behavioural desires (Australian Government, 2018; Kininmonthth et al., 2018).

As stated by Zuboff (2015), the understanding of commodifying identity as threatening to privacy generally should coincide with corrected deficiencies within law. Instead, Australia has implemented government surveillance legislation such as the *Telecommunications (Interception and Access) Amendment (Data Retention) Act 2015*. The existence of which suggests the Australian general public possess leastways alternate, but likely ignorant attitudes towards personal data privacy. More particularly, in context of historical and contemporary mishandling of privacy within Australia, Australian residents may not understand why they should protect their personal data. As such, the study focus narrowed from the five research questions related to the general public and aimed to explore two research objectives. Firstly, ‘what attitudes do Australian residents possess towards personal data on Facebook?’ Secondly, ‘do attitudes towards personal data on Facebook differ amongst Australian residents?’

**Method**

**Participants**

The current research comprised a snowball sampling of 65 participants whose participation was voluntary and without incentive. The majority of participants self-reported being residents of Australia (*n* = 64, 98.46%), whilst 1.54% (*n* = 1) indicated residency of other nations. Participants’ self-reported ages ranged from 18 to 67, with a median age of 37 (*M* = 36.8, *SD* = 14.75). In comparison, the median age of the Australian population during 2016 was 38 according to the Australian Bureau of Statistics (2019). Though the median age of the current sample and Australia are similar, these statistics are not entirely comparable. This is because the Australian Bureau of Statistics (2019) sampled individuals under 18-years of age while the current research did not. 12.31% (*n* = 8) of participants did not provide their age.

The current research divides participants into two age-related subsamples of either 18 to 40-years of age (*n* = 34, 52.31%) or 41-years of age and over (*n* = 23, 35.38%). Participant sex was self-reported as either a) ‘female’ (*n* = 37, 56.92%), b) ‘male’ (*n* = 19, 29.23), ‘other’ (*n* = 1, 1.54%), or no recorded response (*n* = 8, 12.31%). Though, in comparison to the Australian Bureau of Statistics’ (2019) data, the Australian population during 2016 consisted of 50.7% females and 49.3% males. Given these comparisons between the Australian population and the current sample, the current sample may not be representative of the Australian general public. This is also due to no confounding variables being controlled for.

Facebook account status was self-reported as: a) ‘yes, I have a Facebook account’ (*n* = 48, 73.85%); b) ‘no, I do not have a Facebook account’ (*n* = 7, 10.77%); c) ‘yes, I have a Facebook account, but it is deactivated’ (*n* = 2, 3.08%); or no recorded response (*n* = 8 , 12.31%). Lastly, participants’ self-reported their Facebook use as: a) ‘never’ (*n* = 4, 6.15%); ‘rarely’ (*n* = 4, 6.15%); ‘occasionally’ (*n* = 10, 15.38%); ‘frequently’ (*n* = 33, 50.77%); ‘constantly’ (*n* = 6, 9.23%); or no recorded response (*n* = 8, 12.31%). Descriptions of common statistical symbols used in the current research are described in Table 2.1.

**Materials**

A Facebook webpage devised specifically for the current research contained the embedded Qualtrics survey link necessary for participation (see Appendix A). Qualtrics.com is an online digital tool for constructing and distributing surveys. Within the online survey was the participant information form (PIF) (see Appendix B) and 30-item questionnaire (see Appendix C). The PIF described the current research questions, actions necessary for voluntary participation, and obtained implied consent via participants indicating ‘Yes, I agree to participate’. Obtaining participants’ consent was required for compliance with the *National Health and Medical Research Council Act 1992* (Cth) for research involving human participants in Australia (National Statement on Ethical Conduct in Human Research, 2007). The first five items of the 30-item questionnaire aimed to measure self-reported a) nation of residency, b) Facebook account status, c) age, d) sex, and e) Facebook use.

Participants’ self-reported country of residency was measured as either ‘Australia’ or ‘other’ because the current research pertained only to Australian residents. Other cultural or ethnical variables were not measured due to time-related ethics constraints. Following previous studies (Mathiyalakan et al., 2014; Pinchot & Paullet; Pitkanen & Tuunainen, 2012), participants’ Facebook account statuses were measured as either: a) ‘yes, I have a Facebook account’; b) ‘no, I do not have a Facebook account’; or additionally c) ‘yes, I have a Facebook account, but it is deactivated’. Participant sex was measured alike previous research (Australian Government, 2018; Bakan, 2018; Budak et al., 2013; Furini & Tamanini, 2015; Ghosh & Singh, 2016; Kininmonthth et al., 2018; Mathiyalakan et al., 2014; Pinchot & Paullet, 2012; Pitkanen & Tuunainen, 2012), as either ‘female’ or ‘male’. ‘Other’ was provided within the current research as an option for intersex individuals.

Age was measured via a drop-down menu within Qualtrics with options ranging from 18 to 100. Participants were not able to self-report being less than 18-years of age due to ethics-related time constraints. In Kezer et al.’s (2016) study, participants were divided into three age-related subsamples based on Kail and Cavanaugh’s (2010) lifespan stages: 1) young adulthood spanning 18 to 40-years of age; 2) middle adulthood spanning 41 to 65-years of age; and 3) late adulthood spanning ages over 65-years. Within the current research, two age-related subsamples were utilised: a) between 18 and 40-years of age and b) 41-years of age and over. This is because Kezer et al.’s (2016) study demonstrated key differences likely exist between these two age-related subsamples. Moreover, two age-related subsamples are also advantageous to the current research because only one current participant self-reported being over 65-years of age.

Similarly to previous research (Bakan, 2018; Tsay-Vogel et al., 2018), Facebook use was measured, but uniquely within the current study as: a) ‘never’; b) ‘rarely’; c) ‘occasionally’; d) ‘frequently’; or e) ‘constantly’. The current research did not collect observational data of participants’ Facebook use due to ethics constraints. Participants could have been required to quantify and then report their Facebook use independently as Tsay-Vogel et al. (2018) did, but this seemingly provides only superficial vigour. This is because such an approach is reliant on the accuracy of participants’ self-quantified Facebook use estimates. Additionally, participants’ responses to the subsequent 25-items were measured via a five-point Likert-type scale ranging from 0 (*Strongly Agree*) to 4 (*Strongly Disagree*)(see Appendix C). These 25-items aimed to measured five unique attitudinal factors, each comprising five items (see AppendixD). The five unique attitudinal constructs were: 1) Facebook personal data security; 2) Facebook personal data privacy; 3) Facebook personal data commerce; 4) Facebook metadata; and 5) Facebook accountability.

Likert (1974) states attitudes should be measured on a continuum of extreme appreciation or depreciation towards phenomena. Moreover, Likert and Likert-type scales were devised by Likert (1974; 1948) for this purpose, and seemingly do so consistently (Gliem & Gliem, 2003; Jacoby, 1971). The five attitudinal constructs which this research aimed to measure and their respective items were devised in accordance with Likert’s (1974) guidelines for measuring attitudinal data. These guidelines being: 1) items should be statements of desired behaviour with syntax contextualised presently, for example, as *should* as opposed to in the past as *is*; 2) compose items simply whilst still presumably measuring the supposed attitudinal facet; 3) items should be worded to elicit modal reactions which are heterogenous from one item to another; 4) reduce ‘space’ or stereotyped response error by *reverse scoring* items; 5) ; and 6) develop multiple items for each attitudinal construct as this is more likely to measure quiescent structures of an attitude. Reverse scoring refers to reversing measurement of an item so disagreement with such an item indicates agreement with non-reverse scored items or vice versa (Likert, 1974).

**Procedure**

A brief summary of the survey and research questions were provided on the Facebook webpage created for this research (see Appendix A). A link to the Qualtrics survey which participants were required to use for participation was also provided. A link to this Facebook webpage was shared amongst the researcher’s associates who were invited to participate. Additionally, these individuals were encouraged to share information necessary to participate amongst associates. As such, participation was completely digital, with no requirement or requests for participants to participate at a physical location. Moreover, no physical copies of the PIF or questionnaire were provided, although participants were informed electronic copies were available if requested. Individuals were capable or participating for a three-week data collection period spanning late August, 2019 to mid-September, 2019. Upon using the Facebook webpage link, individuals were taken to the Qualtrics survey and informed by the PIF about the purpose of the research.

This included providing the legal definition of personal information within Australian law, as well as information pertaining to the anonymity of their responses. At the bottom of the PIF individuals were informed of who to contact for concerns or questions regarding the current research. Next, implied consent for participation was obtained via the statement ‘Do you wish to participate in the current research project?’ Those willing to participate digitally indicated ‘Yes, I agree to participate in the current research’ and were directed to the first item of the 30-item questionnaire. Those who digitally indicated ‘No, I do not agree to participate’ were directed to the end of the survey which thanked all participants for their time. All participant responses, complete or incomplete, were aggregated and stored electronically on Qualtrics’ servers. This data was then downloaded and analysed following the removal of any information non-essential to the current research. Data were analysed utilising SPSS, R Programming, and Microsoft Excel.

**Results**

The aggregated 65 participants’ responses were screened for incomplete questionnaires, self-reported residency as ‘other’, drop-outs, and space error. 1 participant (1.54%) was removed from the sample due to indicating residency as ‘other’. Additionally, 7 (10.77%) participants who self-reported Australian residency thereafter dropped out. A 48-year old female participant who self-reported using Facebook ‘constantly’ also dropped out. As such, 12.31% (*n* = 8) of the sample dropped out, but no participants asked to withdraw their participation. Another participant was removed due to indicating ‘agree’ on all non-demographical items, including reverse-scored items. This participant reported being a 32-year-old female with an active Facebook account used frequently. Due to 15.38% (*n* = 10) of the sample either dropping out or being removed, the total usable sample comprised 55 self-reported Australian residents.

The reliability of the administered questionnaire and the utilised 5 subscales were assessed via Cronbach’s reliability coefficient. Subscale 1 was labelled ‘Facebook personal data security’, comprised 5-items, and demonstrated a Cronbach’s reliability coefficient of .68. Subscale 2 was labelled ‘Facebook personal data privacy’, comprised 5-items, and demonstrated a Cronbach’s reliability coefficient of .59. Subscale 3 was labelled ‘Facebook personal data commerce’, comprised 5-items, and demonstrated a Cronbach’s reliability coefficient of .62. Subscale 4 was labelled ‘Facebook metadata’, comprised 5-items, and demonstrated a Cronbach’s reliability coefficient of .44. Subscale 5 was labelled ‘Facebook accountability’, comprised 5-items, and demonstrated a Cronbach’s reliability coefficient of .68. The collective 25-item questionnaire demonstrated a Cronbach’s reliability coefficient of .85. Tables 3.1 through 3.6 provide the corrected item-total correlations and Cronbach’s reliability coefficients if item deleted for each subscale separately, as well as the 25-item questionnaire. These tables suggested the model may require exploratory factor analysis to identify quiescent structures underlying the variables.

Outliers were first assessed utilising a combination of SPSS functions. This included SPSS’s outlier formulas, examination of variable means and 5% trimmed means, as well as visual inspections of stem-and-leaf plots and histograms. SPSS’s outlier formulas flagged a total of 19 participants’ data sets as outliers. Via visual inspections of stem-and-leaf plots as well as histograms, 6 of the 19 flagged participants were deemed candidates for removal. Though, inspections of 5% trimmed means showed only minor improvement for variables means, and as such all participants’ (*N* = 55) data were retained. Retaining these outliers may increase or decrease the total factors derived from exploratory factor analyses, but needless removal of outliers may also do so (Liu, 2011).

Assumptions testing was conducted prior to an exploratory factor analysis for data collected via the 25-items related to attitudinal constructs. These assumptions tests related to: 1) variable type; 2) sample size; 3) linearity; and 4) multicollinearity (Knight, 2000; Liu, 2011). Firstly, variable type was controlled for in the current research via measuring responses at an interval level. This was necessary because Pearson product-moment (PPC) correlations conducted when factor analysing data within SPSS assumes measurement at an interval level (IBM, 2018). Secondly, a sample of 55 participants would traditionally be considered the minimum or slightly-below the minimum sample required for accurate factor analyses; however, more contemporary research demonstrates there is no absolute sample-size threshold (de Winter, Dodou, & Wieringa, 2009).

Bartlett’s test of sphericity, which tests overall significance of all correlations within the correlation matrix, was significant utilising Approximate Chi-Square statistic (*~X2*(300) = 858.48, *p* = <.001). This indicated factor analysis was appropriate for data derived from the 25-item questionnaire administered to participants within the current study. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy indicated the sample was favourable (KMO = .708), as did anti-image matrices which contained no measure of sampling adequacy (MSA) values < .5. A low determinant (4.831E-9) suggested the PPC correlation matrix and a reproduced correlation matrix should be screened for multicollinearity. Visual inspection of the correlation matrix suggested multicollinearity was not present. 73 (24%) non-redundant residuals with absolute values greater than .05 were observed within the reproduced correlation matrix, indicating multicollinearity was not present. As such, further analyses were performed. The PPC correlation matrix was positive definite.

An Exploratory Factor Analysis using Principal-Axis Factoring (PAF) for the current results was performed with 25-iterations specified. PAF was utilised because literature suggests such an approach using between 25 to 50 iterations was appropriate for data similar to the current data (de Winter et al., 2009; Knight, 2000; Tinsley & Tinsley, 1987). An oblique rotation was utilised which specified factor extraction based on the criterion of >1 eigen values with a maximum 25-iterations for convergence. An oblimin rotation with Delta = 0 was utilised, also known as a quartimin rotation (Basto & Pereira, 2012), which allows the factors to correlate, but seemingly not more-or-less so than Delta = >0 (Osborne & Costello, 2005).

An oblique rotation was used as opposed to an orthogonal rotation because correlations were expected between the 25 variables (Basto & Pereira, 2012; Brown, 2009; Osborne & Costello, 2005). Specifically, correlations were expected due to error inherently coinciding with quantifying psychological phenomena (Osborne & Costello, 2005). 7 factors were extracted with >1 eigen values, but the communality of a variable exceeded 1 during the 25th iteration. Subsequently, the extraction was terminated. Visual inspection of the scree-plot shown in Figure 1suggested 5 factors may provide the best solution.

Barring minimum eigenvalue extraction criterion, a subsequent factor analysis utilising the same methodology outlined with a fixed number of 5 factors specified. This factor matrix can be seen in Table 4.1. 5 factors were extracted after 13-iterations. Visual inspection of the factor correlation matrix demonstrated correlations <.32 and warranted the use of oblique extraction methods (Brown, 2009). The removal of items 4, 13, and 19 whilst maintaining 5 factors provided the most interpretable solution. Items 4, 13, and 19 were removed due to cross-loading beyond the <.32 threshold on various factors (Brown, 2009). All factors barring Factor 5 had eigenvalues >1, with only 1 small communality value observed for item 1.

The eigenvalue of Factor 5 was <1, but visual inspection of scree-plot in Figure 1suggested Factor 5 should be retained. There is research to suggest methods such as scree-plot inspections are more appropriate for determining factor retainment than eigenvalues >1 (Osborne & Costello, 2005). Item 1 was retained because removal was not necessary (IBM, 2016), and to do so led to solutions with various Factor 5 items cross-loading beyond the <.32 threshold onto other factors (Brown, 2009). Items 6, 7, and 24 were removed from Factor 1. While the factor analysis solution demonstrated such items loaded appropriately onto Factor 1, item contents seemingly related to Factor 5. Factor loadings for the 5 extracted factors can be seen in Table 3.2, with factor loadings <.32 not shown.

Extracted sums of squared loadings demonstrated Factor 1 had a total eigenvalue of 5.63 and accounted for 29.64% of variance in the data. Factor 2 had a total eigenvalue of 2.16 and accounted for 11.37% of variance in the data. Factor 3 had a total eigenvalue of 1.70 and accounted for 8.93% of variance in the data. Factor 4 had a total eigenvalue of 1.35 and accounted for 7.10% of variance in the data. Factor 5 had a total eigenvalue of .68 and accounted for 3.59% of variance in the data. Collectively, the solution accounted for a cumulative 60.64% of variance in the data.

Through factor analysis 5 factors were revealed which sufficiently explained the underlying constructs of items which comprised the initial 25-item questionnaire. Factor 1 was labelled ‘Explicit Consent’, comprised 4-items, and demonstrated a Cronbach’s reliability coefficient of .87. Comparatively, the 7-item Factor 1 demonstrated a Cronbach’s reliability coefficient of .88. Cronbach’s reliability coefficient if item deleted did not indicate items 6, 7, and 24 should be deleted. Factor 2 was labelled ‘Behaviour Autonomy’, comprised 4-items, and demonstrated a Cronbach’s reliability coefficient of .91. Factor 3 was labelled ‘Facebook Culpability’, comprised 4-items, and demonstrated a Cronbach’s reliability coefficient of .85. Factor 4 was labelled ‘Commodification’, comprised 4-items, and demonstrated a Cronbach’s reliability coefficient of .72. Factor 5 was labelled ‘Visage Autonomy’, comprised 3-items, and demonstrated a Cronbach’s reliability coefficient of .49.

The composition of all 5 factors into a singular tool was labelled the ‘Commodi-5’. The Commodi-5 comprised a total of 19-items and demonstrated a Cronbach’s reliability coefficient of .82. Item-total correlations and Cronbach’s reliability coefficient if item deleted did not indicate the removal of specific items from factor 1-through-5 was necessary to increase the Commodi-5’s reliability. Tables 5.1 through 5.6 demonstrate the corrected item-total correlations and Cronbach’s reliability coefficient if item deleted for each factor, as well as the Commodi-5.

The Explicit Consent subscale relates to persons’ desire for Facebook to obtain specific consent from users prior to any collection, handling, manipulation or use of users’ data. Specifically, Explicit Consent entails behaviours of Facebook such as the sale, transfer, trade, or any use of personal data stored on Facebook servers for profit.

The Behaviour Autonomy subscale relates to persons’ desire for protection and concealment of their and all personal data stored on Facebook servers. Specifically, Behaviour Autonomy entails behaviours of Facebook like protecting and concealing personal data such as likes and comments.

The Facebook Culpability subscale relates to persons’ desire for Facebook to be primarily liable for any third-party access to users’ personal data. Specifically, Facebook Culpability entails behaviours of attributing accountability, blame, fault, and liability to Facebook for unauthorised access or obtainment of personal data stored on Facebook servers.

The Commodification subscale comprised items related to desire for personal data stored on Facebook servers to be properties of those identifiable. Specifically, Commodification entails behaviours such as attaining, observing, and using the all Facebook users’ personal information.

The Visage Autonomy subscale comprised items related to the expression of desire for protection and concealment of all personal data stored on Facebook servers. Specifically, Behaviour Autonomy entails behaviours of Facebook like protecting and concealing personal data such as photos and videos.

Commodi-5 scores were capable of ranging from 0 to 76. Participants’ (*N* = 55) scores on the Commodi-5 ranged from 0 to 42 and demonstrated a median of 8 (*M* = 10.22, *SD* = 9.04). Explicit Consent subscale scores were capable of ranging from 0 to 16. Participants’ Explicit Consent scores ranged from 0 to 7 and demonstrated a median of 0 (*M* = .53, *SD* = 1.32). Behaviour Autonomy subscale scores were capable of ranging from 0 to 16. Participants’ Behaviour Autonomy scores ranged from 0 to 10 and demonstrated a median of 0 (*M* = 1.56, *SD* = 2.59). Facebook Culpability subscale scores were capable of ranging from 0 to 16. Participants’ Facebook Culpability scores ranged from 0 to 10 and demonstrated a median of 1 (*M* = 1.91, *SD* = 2.50). Commodification subscale scores were capable of ranging from 0 to 16. Participants’ Commodification scores ranged from 0 to 16, with a median of 3 (*M* = 3.38, *SD* = 3.25). Visage Autonomy subscale scores were capable of ranging from 0 to 12. Participants’ Visage Autonomy scores ranging from 0 to 8, with a median of 0 (*M* = 1.04, *SD* = 1.89).

Additional assumption testing was conducted prior to parametric significance tests of data collected from the remaining 19-items of the Commodi-5. These assumptions tests were: 1) variable type; and 2) homogeneity of variances (Hotelling & Pabst, 1936). Variable type was controlled for in the research design, as discussed during assumption testing for exploratory factor analysis. Levene’s test for homogeneity of variances were conducted prior to each parametric test. The results of which are described alongside each significance test. Distribution normality is not necessary for parametric significance testing because false positive results were controlled at *p* = .05. Moreover, Central Limit Theorem dictates the true mean value of a population be the mean of a normally distributed sample (Islam, 2018); however, a normally distributed sample is not necessary to derive the true mean value of a population. Still, distribution normality was assessed for the Commodi-5 as well as the 5 subscales for reference in future research. Initially, visual inspection of histograms, normal quartile-quartile (Q-Q) plots, detrended Q-Q plots, and boxplots were conducted. Visual inspection of these graphs suggested data would exhibit non-Gaussian distributions. Commodi-5 and the 5-respective subscale skewness and kurtosis statistics are demonstrated in Table 6.1 through 6.4. Additionally, all Kolmogorov-Smirinov and Shapiro-Wilk statistics were statistically significant, meaning participants’ scores exhibited non-Gaussian distributions.

An independent samples *t*-tests was used to compare Commodi-5 mean scores of participants aged between 18 to 40-years of age and those 41-years of age and over. Levene’s test for equality of variances was statistically non-significant (*F* = 1.58, *p* = .21). As such, equal variances could be assumed. The *t*-test was statistically significant, with participants 41-years of age and over (*M* = 6.36, *SD* = 6.74) demonstrating Commodi-5 mean scores 6.42 points lower, 95% CI [1.71, 11.14], than participants aged 18 to 40-years of age (*M* = 12.79, *SD* = 9.55), *t*(53) = 2.73, *p* = .01, two-tailed, *gU* = 5.20, 95% CI [4.07, 6.32]. Hedge’s (1981) unbiased effect size estimates were used where assumptions of variance homogeneity were unviolated (Enzmann, 2015), but equal sample size assumptions were violated (Cohen, 1988).

An independent samples *t*-test was used to compare Explicit Consent subscale mean scores of participants aged between 18 to 40-years of age and those 41-years of age and over. Levene’s test for equality of variances was statistically non-significant (*F* = 3.58, *p* = .06). As such, equal variances could be assumed. The *t*-test was statistically non-significant, *t*(53) = .96, *p* = .34, *gU* = 1.91, 95% CI [1.26, 2.56]. Participants 41-years of age and over (*M* = .32, *SD* = .84) demonstrated Explicit Consent mean scores .35 points lower, 95% CI [-.38, 1.08], than participants aged 18 to 40-years of age (*M* = .67, *SD* = 1.55).

An independent samples *t*-test was used to compare Behaviour Autonomy subscale mean scores of participants aged between 18 to 40-years of age and those 41-years of age and over. Levene’s test for equality of variances was statistically non-significant (*F* = 2.74, *p* = .10). As such, equal variances could be assumed. The *t*-test was statistically non-significant, *t*(53) = 1.44, *p* = .16, *gU* = 2.85, 95% CI [2.09, 3.61]. Participants 41-years of age and over (*M* = .95, *SD* = 2.52) demonstrated Behaviour Autonomy mean scores 1.02 points lower, 95% CI [-.40, 2.43], than participants 18 to 40-years of age (*M* = 1.97, *SD* = 2.60).

An independent samples *t*-test was used to compare Facebook Culpability subscale mean scores of participants aged between 18 to 40-years of age and those 41-years of age and over. Levene’s test for equality of variances was statistically non-significant (*F* = 1.36, *p* = .25). As such, equal variances could be assumed. The *t*-test was statistically non-significant, *t*(53) = 1.22, *p* = .23, *gU* = 2.40, 95% CI [1.69, 3.10]. Participants 41-years of age and over (*M* = 1.41, *SD* = 2.02) demonstrated Facebook Culpability mean scores .83 points lower, 95% CI [-.54, 2.21], than participants 18 to 40-years of age (*M* = 2.24, *SD* = 2.75).

An independent samples *t*-test was used to compare Commodification subscale mean scores of participants aged between 18 to 40-years of age and those 41-years of age and over. Levene’s test for equality of variances was statistically non-significant (*F* = 3.69, *p* = .06). As such, equal variances could be assumed. The *t*-test was statistically significant, with participants 41-years of age and over (*M* = 1.68, *SD* = 2.15) demonstrating mean scores 2.83 points lower, 95% CI [1.20, 4.47], than participants aged 18 to 40-years of age (*M* = 4.52, *SD* = 3.38), *t*(53) = 3.48, *p* = <.01, two-tailed, *gU* = 6.90, 95% CI [5.48, 8.31]. Participants 41-years of age and over (*M* = 1.68, *SD* = 2.15) demonstrated Commodification mean scores 2.83 points lower, 95% CI [1.20, 4.47], than participants 18 to 40-years of age (*M* = 4.52, *SD* = 3.38).

An independent samples *t*-test was used to compare Visage Autonomy subscale mean scores of participants aged between 18 to 40-years of age and those 41-years of age and over. Levene’s test for equality of variances was statistically non-significant (*F* = .70, *p* = .41). As such, equal variances could be assumed. The *t*-test was statistically non-significant, *t*(53) = .41, *p* = .69 *gU* = .79, 95% CI [.23, 1.35]. Participants 41-years of age and over (*M* = .91, *SD* = 1.54) demonstrated Visage Autonomy mean scores .21 points lower, 95 CI [-.84, 1.26], than participants 18 to 40-years of age (*M* = 1.12, *SD* = 2.10).

A one-way analysis of variance (ANOVA) was conducted to investigate Commodi-5 and subscale mean scores by participants’ Facebook account status. Levene’s test was statistically non-significant for the Commodi-5 (*F* = 1.40, *p* = .26), as well as the five subscales. Specifically, the Levene’s test results were: a) Explicit Consent (*F* = 1.04, *p* = .36); b) Behaviour Autonomy (*F* = 1.50, *p* = .23); c) Facebook Culpability (*F* = .28, *p* = .75); d) Commodification (*F* = .66, *p* = .52); and e) Visage Autonomy (*F* = 1.45, *p* = .25). As such, equal variances could be assumed. The ANOVA was statistically non-significant, with the following eta-squared omnibus effect sizes: a) Commodi-5, *η2* = .01, 95% CI [.00, .10]; b) Explicit Consent, *η2* = .02, 95% CI [.00, .12]; c) Behaviour Autonomy, *η2* = .01; 95% CI [.00, .08] d) Facebook Culpability, *η2* = .00, 95% CI [.00, .03]; e) Commodification, *η2* = .01, 95% CI [.00, .10]; f) Visage Autonomy, *η2* = .01, 95% CI [.00, .10]. Descriptive statistics for the ANOVA comparing Commodi-5 and subscale mean scores by Facebook account status are demonstrated in Table 7.1.

A one-way ANOVA was conducted to investigate Commodi-5 and subscale mean scores by participants’ sex. Levene’s test was statistically non-significant for the Commodi-5 (*F* = .40, *p* = .53), as well as the five subscales. Specifically, the Levene’s test results were: a) Explicit Consent (*F* = 3.61, *p* = .06); b) Behaviour Autonomy (*F* = .01, *p* = .91); c) Facebook Culpability (*F* = .43, *p* = .51); d) Commodification (*F* = 3.62, *p* = .06); and e) Visage Autonomy (*F* = .56, *p* = .46). As such, equal variances could be assumed. The ANOVA was statistically non-significant, with the following eta-squared omnibus effect sizes: a) Commodi-5, *η2* = .02, 95% CI [.00, .11]; b) Explicit Consent, *η2* = .02, 95% CI [.00, .11]; c) Behaviour Autonomy, *η2* = .01, 95% CI [.00, .08]; d) Facebook Culpability, *η2* = .01, 95% CI [.00, .09]; e) Commodification, *η2* = .05, 95% CI [.00, .17]; and f) Visage Autonomy, *η2* = .01, 95% CI [.00, .08]. Descriptive statistics for the ANOVA comparing Commodi-5 and subscale mean scores by sex are demonstrated in Table 7.2.

A one-way ANOVA was conducted to investigate Commodi-5 and subscale mean scores by participants’ Facebook use. Levene’s test was statistically non-significant for the Commodi-5 (*F* = .81, *p* = .53), as well as the five subscales. Specifically, the Levene’s test results were: a) Explicit Consent (*F* = 1.44, *p* = .24); b) Behaviour Autonomy (*F* = 1.45, *p* = .23); c) Facebook Culpability (*F* = 1.30, *p* = .28); d) Commodification (*F* = 1.19, *p* = .33); and e) Visage Autonomy (*F* = 1.41, *p* = .24). As such, equal variances could be assumed. The ANOVA was statistically non-significant, with the following eta-squared omnibus effect sizes: a) Commodi-5, *η2* = .01, 95% CI [.00, .05]; b) Explicit Consent, *η2* = .04, 95% CI [.00, .12]; c) Behaviour Autonomy, *η2* = .02, 95% CI [.00, .09]; d) Facebook Culpability, *η2* = ..02, 95% CI [.00, .08]; e) Commodification, *η2* = .05, 95% CI [.00, .13]; and f) Visage Autonomy, *η2* = .03, 95% CI [.00, .10]. Descriptive statistics for the ANOVA comparing Commodi-5 and subscale mean scores by Facebook use are demonstrated in Table 7.3.

**Discussion**

Cambridge Analytica’s use of personal data scraped from Facebook to predict human behaviour did not lead to Mark Zuckerberg’s testimony within Australia. Given such testimonies were required by the USA Congress and European Parliament (Dogruel & Jockel, 2019; Lapaire, 2018), this initially suggested the Australian general public have alternate attitudes towards personal data privacy. Zuboff’s (2015) surveillance capitalism suggests such attitudes exist because the Australian general public have not yet identified commodifying identity as threatening to personal data. When commodifying identity has been identified as threatening to personal data, however, likewise legislative changes should be implemented (Zuboff, 2015). This then suggested attitudes, as expressions of desired behaviour (Likert, 1974), are appropriate phenomena to measure Australian residents’ desire for legislative change. As such, the current study explored two research objectives. Firstly, ‘what attitudes do Australian residents possess towards personal data on Facebook?’ Secondly, ‘do attitudes towards personal data on Facebook differ amongst Australian residents?’

The first research objective is addressed via exploratory factor analyses which quantified attitudinal structures underlying the original 25-item variables expressing desired behaviour (Likert, 1974). Subsequently, the 19-item Commodi-5 is valid for use with the current participants. Moreover, a Cronbach’s reliability coefficient above .5 was observed for the Commodi-5. As such, the Commodi-5 can also be tentatively deemed appropriately reliable at measuring these quantified attitudinal structures. Though, the measured reliability of the Commodi-5 may be improved. Table 4.5 demonstrates the Cronbach’s reliability coefficient of Visage Autonomy would increase if item-14 were removed. Because item-14 loaded beyond the <.32 threshold, it may be more beneficial to the overall Commodi-5 tool if item-14 were re-structured and retained. Such a structure being, for example: ‘My personal information on Facebook, such as photos and videos, should not be usable by the general public to track my geographic whereabouts.’

Secondly, Visage Autonomy comprises only three items, whereas the other four Commodi-5 subscales each comprise four items. As such, an appropriately structured fourth item would likely increase the reliability of Visage Autonomy. Given Visage Autonomy comprises items related to security and privacy of personal data on Facebook, such as photos and videos, an additional item should reflect this. For example: ‘My personal information on Facebook, such as photos and videos, should not be usable by the general public to monitor my geographic whereabouts.’ Consequently, a 20-item iteration of the Commodi-5 is proposed for future research, with Visage Autonomy comprising a 4th item. The items which comprise the 20-item Commodi-5 are demonstrated in Table 8.1.

Nonetheless, current Commodi-5 scores demonstrate participants’ desires for Australian residents’ innate legal ownership of their personal data stored on Facebook’s servers. Specifically, low Behaviour Autonomy and Visage Autonomy subscale scores demonstrate current participants desired behaviour and visage-related personal data to be concealed and protected from third parties. The regulation of which, according to existing legislation, would include information which identifies individuals or their communications, whether recorded or unrecorded, factual or fictitious. Consequently, personal information as outlined within s. 6 of the *Privacy Act 1988* and s. 187LA of the *Telecommunications (Interception and Access) Act 1979* requires amendments which ascribes personal data ownership to those identifiable by the data. Without such amendments, efforts such as those taken by the OAIC will continue to be redundant, and Facebook will remain unaccountable.

That is, the APP do not regulate methods of personal data collection. As such, an amendment of the *Privacy Act 1988* is also necessary to define and necessitate explicit consent. Current participants’ Explicit Consent subscale scores were low. This means participants desired consent to be obtained by Facebook from the identifiable users prior to any collection, handling, manipulation, or use of personal data. Explicit consent therein necessitates greater specificity for permission acquisition than consent and thereafter allows users to make informed decisions. For example, the amended Actwould require Facebook inform each user of third-parties’ intentions for their personal data and obtain users’ specific consent to do so. Subsequently, Facebook would be lawfully accountable for any collection, handling, manipulation, or use of users’ personal data without the explicit consent for such.

Moreover, current participants’ low Facebook Culpability and Commodification subscale scores demonstrate the Australian general public may already desire Facebook to be accountable for such. That is, low Commodification subscale scores demonstrate desire for personal data stored on Facebook servers to be legal properties of those identifiable. Additionally, low Facebook Culpability subscale scores demonstrate current participants desired Facebook’s culpability for unauthorised access and obtainment of personal data stored on Facebook servers. As such, current participants desired Facebook to be primarily responsible for personal data as legally owned properties of those identifiable, uncommodifiable without explicit consent. Legal liabilities for such being commensurate with the ramifications of identity commodification. For instance, personal data scraped from Facebook servers by Aleksandr Kogan were used by Cambridge Analytica to potentially influence the results of democratic elections.

Moreover, current participants’ attitudes towards personal data on Facebook as measured by the Commodi-5’s subscales are largely unanimous. If a halfway cut-off score of 38 from the total of 76 was prescribed, only one participant demonstrated a score above this cut-off. Moreover, given the discrepancy between this individual’s Commodi-5 score and the mean, the median is likely a better indication of participants’ scoring tendency. Though, both participants’ mean and median scores on all subscales are low, median scores ranged from 0 to 3 out of a possible 12 to 16 on each. This includes the Commodification subscale wherein all items were reverse-scored. As such, current participants’ Commodi-5 mean scores collectively demonstrate participants possessed attitudes expressing desire for Facebook’s facilitation of identity commodification to be mitigated.

Additionally, there are somewhat precedential findings within the identified literature suggesting the current results are generalisable. For example, the Australian Government (2018) seemingly found participants believed SNS poses the greatest threat to privacy and that identity commodification should constitute misuse. Though, concurrent to the current research such behaviour is not liable for legal penalty as Australian law is without constitutional protection of personal data. Consequently, the current research largely sets precedent for Australian investigation of attitudes for change within Australia to mitigate Facebook’s facilitation of identity commodification. Moreover, unlike identified previous research, the Commodi-5 provides a theoretically sound, valid, and reliable tool for measuring attitudes towards personal data on Facebook.

Further, the current findings in context of those previous (Australian Government, 2018) imply the Australian general public, unlike the Croatian general public (Budak et al., 2013), are not ignorant towards privacy. This is because current participants largely possessed attitudes desiring a) explicit consent, b) Behaviour Autonomy, c) Facebook culpability, d) Commodification, and e) Visage Autonomy for personal data on Facebook. According to Zuboff (2015), these attitudes should lead to tangible change within Australian law; however, this has not yet occurred. The reasons for which may be: 1) Zuboff’s (2015) concepts are non-applicable; 2) the measured attitudes are just emerging; 3) the current participants are not representative of the Australian general public; or 4) disunity between the Australian general public and the Australian Government. Pending future research using more rigorous sampling methods, the latter notion is relevant to the current objectives.

That is, the notion that attitudes of the Australian general public and their appointed bureaucrats are not uniform. Specifically, such disunity manifests from conflicting desires for Facebook’s facilitation of identity commodification. The implication being novelised democratic principles within Australia by a paternalistic government. Specifically, a paternalistic government wherein the desired behaviours of the majority are trivial to appointed officials. If such a notion is accurate, Zuboff’s (2015) conceptualisation of how surveillance capitalism is mitigated cannot occur within Australia. The actuality of which is consistent with Australia’s historical and contemporary mishandling of residents’ personal data privacy.

The second research objective is addressed via significance testing of participants’ responses recorded via the 19-items comprising the Commodi-5. All one-way ANOVAs utilised within the current study were statistically non-significant. Specifically, these ANOVAs compared participants’ Commodi-5 and subscale mean scores by a) Facebook account status, b) sex, and c) Facebook use. The measured differences in Commodi-5 and subscale mean scores between these demographical subsamples cannot be stated as having not occurred by chance. Further, the one-way ANOVAs comparing Commodi-5 and subscale mean scores by Facebook use being statistically non-significant does not support the findings of Bakan (2018) and Tsay-Vogel et al. (2018). Specifically, this does not support persons using Facebook less being statistically significantly more likely to perceive Facebook as a threat to privacy (Bakan, 2018; Tsay-Vogel et al., 2018). Still, this finding may not be confirmative of Facebook use having no effect on attitudes towards personal data on Facebook.

This is because effects were observed for all one-way ANOVAs comparing Commodi-5 and subscale mean scores by Facebook use. Though, lower and upper 95% CI’s for these effect sizes suggest meaningful variability within larger but similar populations may be probable. The obtained subsamples may be too small, however, while possibly in proportion to the Australian general public, to provide an accurate mean score. For example, there were only two out of 55 participants which indicated ‘Yes, I have a Facebook account, but it is deactivated’, whereas 46 participants indicated ‘Yes, I have a Facebook account’. The mean score of ‘Yes, I have Facebook account, but it is deactivated’ subsample participants on the Commodi-5 was 5.50. The lower 95% CI for this subsample was -.85 and the upper 95% CI was 11.85. As such, the measured mean of 5.50 may be generalisable to the Australian public generally; however, the true mean may be different whilst still within the upper and lower CI values. This is just one example of how small and possibly disproportionate subsamples may have hindered one-way ANOVA significance tests. Nevertheless, from data available, no attitudinal differences towards personal data on Facebook exist between participants by Facebook account status, sex, or Facebook use.

Nevertheless, two statistically significant independent samples *t*-tests findings were observed in the current study. Firstly, participants aged 41-years of age and over demonstrated Commodi-5 mean scores statistically significantly lower than participants aged 18 to 40 years of age. Secondly, participants aged 41-years of age and over demonstrated Commodification mean scores statistically significantly lower than participants aged 18 to 40 years of age. The single participant, a 25-year old female, who scored above the 38-point threshold is further evidence of these age-related differences. Still, because the Commodi-5 and subscales were developed specifically for this research, there is no precedent for inferences about significance effect sizes. Lower and upper 95% CI nonetheless suggest observed effect sizes, whether small or large, are likely reasonably consistent within similar but larger populations. As such, this study sets precedent for future studies which utilise the Commodi-5 and successive iterations.

These age-related differences support Kezer et al.’s (2016) previous findings. Kezer et al. (2016) found participants aged between 18 to 40-years of age were statistically significantly more likely to believe personal data security depended on persons protecting the privacy of others. As such, while not entirely similar, differences between these two age-related demographical subsamples are so far consistently demonstratable. Moreover, the observed statistically significant findings in Commodification scores demonstrates that older persons also desire for personal data to be treated as properties. This then supports Zuboff’s (2015) notion stating individuals eventually identify the threat which commodifying identity poses to personal data. This is because the majority of current participants possessed attitudes desiring Facebook’s facilitation of identity commodification to be mitigated. Similarly to previous findings (Pitkanen & Tuunainen, 2012), younger participants within the current study also possess attitudes which are less-so.

Consequentially, neither Budak et al.’s (2013) ignorance for privacy concept nor Zuboff’s (2015) surveillance capitalism appropriately explains Australian resident’s attitudes towards personal data on Facebook. Despite the Australia general public’s historically and contemporarily mishandled personal data, residents are not ignorant towards privacy (Budak et al., 2013). Moreover, residents’ have seemingly identified Facebook’s facilitation of identity commodification as threatening to personal data, but no change to Australian law has occurred (Zuboff, 2015). As such, Zuboff’s (2015) concept are hindered by suppositions of relatedness between the majority’s desires and the behaviour of appointed officials. The current study relates to personal data on Facebook, but the concept of disunity between government and public reveals more substantial issues. That is, the Australian Government’s actions and the Australian general public’s desires for behaviour are not uniform, with such paternalism undoubtedly bearing consequence. The estimation of which is subject to future investigation wherein current study limitations can be overcome.

Firstly, sampling control is inherently limited within the current study by the use of snowball sampling and anonymous Qualtrics surveying. Secondly, due to ethics-related time constraints, participants who self-reported being under 18-years of age could not be sampled. Both limitations constrain readily generalising current findings to the Australian general public. To overcome these limitations, future research should aim to utilise sampling methods which allow more control, such as a random and stratified sample. Additionally, future research should aim to sample individuals under 18-years of age to allow greater inferences about the data and applicable theory. Lastly, a comparative study between USA and Australian residents may provide additional insight regarding influence of historical treatment of personal data by governance on attitudes. This is because unlike Croatia who achieved independence from Yugoslavia (Budak et al., 2013), or more pertinently, unlike the USA, Australia has not sought independence from Britain. Moreover, the USA did require Mark Zuckerberg testify before USA Congress, even if the questioning parties possessed insufficient understandings of Facebook generally (Deeks, 2019; Lotrea, 2018).

**Conclusion**

Discussion of Aleksandr Kogan’s contracted scraping of 87-million Facebook users’ related-personal data within politics, academia, and the media are largely misguided. That is, such discourse predominantly concerns Facebook’s (2018a; 2018b) personal data handling outlined within the organisation’s ‘Data Policy’ and ‘Privacy Principles’. This is understandable because Facebook (2018a; 2018b) essentially displaces responsibility for protection and concealment of personal data onto users. Moreover, Australia’s 13 Australian Privacy Principles (APP) do not necessitate Facebook conceal or protect personal data stored on Facebook servers. Nor do the APP reference metadata. Given metadata can be data mined for personal data, Australian residents are then particularly vulnerable to identity commodification and thereafter surveillance capitalism (Zuboff, 2015). As is made evident within Australia by the *Telecommunications (Interception and Access) Amendment (Data Retention) Act 2015* which compels internet service providers (ISP) to retain two-year metadata stores of Australian residents.

Mark Zuckerberg’s requisite testimonies before the USA Congress and Europe Parliament followed reporting Cambridge Analytica used data scraped by Aleksandr Kogan to predict human behaviour (Dogruel & Jockel, 2019; Lapaire, 2018); however, no testimony was given or provided within Australia. As such, this initially suggested the Australian general public possess alternate attitudes towards personal data on Facebook to Europe and the USA. Though, Zuboff (2015) states the Australian general public will eventually develop understanding for Facebook’s facilitation of commodifying identity and instigate change in Australian law. That is, Facebook’s facilitatory role as being the world’s largest metadata node harvestable by third-parties of identity commodification. Specifically, the intended function of Facebook’s patented application programming interfaces (API) is to allow third-party developers to scrape personal data from users’ webpages (United States Patent No. US 9189819B2, 2015).

Consequently, the current study aimed to address five research questions within a systematic review of the literature. These were: 1) ‘what attitudes do the Australian general public possess towards personal data security on Facebook?’; 2) ‘what attitudes do the Australian general public possess towards privacy on Facebook?’; 3) ‘what attitudes do the Australian general public possess towards the commodification of personal data?’; 4) ‘what attitudes do the Australian general public possess towards metadata generated while using Facebook?’; and 5) ‘what attitudes do the Australian general public possess towards Facebook’s personal data policies?’

The subsequent review of the literature revealed investigation of the Australian general public’s attitudes towards personal data on Facebook was sparse. Only the Australian Government’s (2018) study was identified to do so, although the study was of poor quality. The quality of identified materials was quantified by the Quantitative Assessment Tool for Quantitative Studies (QATQS) (Effective Public Health Practice Project, 1998a; 1998b) as well as further described within the review of the literature. Though, the majority of identified literature was of poor quality. This necessitated review of materials not directly relatable or generalisable to Australia. Deducible from the aggregated materials were two key findings which guided the study. Firstly, the Australian general public may be ignorant towards privacy due to historical mishandling of privacy within Australia (Budak et al., 2013). Secondly, attitudes towards personal data on Facebook may differ between individuals below 40-years of age and those above (Kezer et al., 2016). As such, the current study narrowed its scope to address two research objectives. These were: 1) ‘what attitudes do Australian residents possess towards personal data on Facebook?’; and 2) ‘do attitudes towards personal data on Facebook differ amongst Australian residents?’

To answer these research objectives, a largely quantitative design was undertaken utilising snowball sampling and an online 30-item survey. Excluding demographical items, the survey comprised a 25-item attitudinal questionnaire which aimed to quantify 55 self-reported Australian residents’ attitudes towards personal data on Facebook. Utilising exploratory factor analysis within SPSS, these 25-items were reduced to the 19-item Commodi-5 comprised of five factors. Namely, Explicit Consent, Behaviour Autonomy, Facebook Culpability, Commodification, and Visage Autonomy. Moreover, the Commodi-5 is appropriately valid and reliable for use with the current participants and similar populations. As such, the Commodi-5 likely measures the attitudes it prescribes to consistently within similar populations.

This means the findings derived from the Commodi-5 in current study are capable of addressing the research objectives. Though, it should be noted the current sample may not be representative of the Australian public generally. This is because the current sample’s age and sex distributions are not comparable or similar to those of the latest Australian census data (Australian Bureau of Statistics, 2019). Still, the first research objective is addressed via participants’ median scores on the Commodi-5. Specifically, the median score of participants on the Commodi-5 was 8 out of 76, suggesting the Australian general public are not ignorant towards privacy (Budak et al., 2013). Contrarily, these scores demonstrate the Australian general public desire Facebook’s facilitation of identity commodification to be mitigated.

The second research objective is addressed via significance testing procedures such as one-way Analysis of Variance (ANOVA) and independent samples *t*-tests. Statistically significant findings were found during independent samples *t*-tests comparing Commdi-5 and Commodification mean scores by age. As such, persons above 40-years of age were statistically significantly more likely to desire Facebook’s facilitation of identity commodification to be mitigated. Moreover, persons above 40-years of age were also statistically significantly more likely to desire their related-personal data to be treated as property. Consequently, older persons seemingly understand Facebook’s facilitation of identity commodification, suggesting like Zuboff (2015) that persons develop these understandings gradually. Still, support for these findings is sparse as the current study largely sets precedent for investigation of attitudes towards personal data on Facebook within Australia.

In conclusion, the Australian general public are not ignorant towards privacy. Rather, the Australian general public’s freedom is seemingly stifled contemporarily by a paternalistic government as it has been historically. That is, the Australian general public seemingly desire Facebook’s facilitation of identity commodification to be mitigated, but these desires are not reflected within Australian law. This disunity between the Australian general public and the Australian Government will undoubtedly have societal implications within Australia. The prediction or discussion of these such implications should be the focus of future study. A comparative study between Australian and USA residents is proposed. This is because change to Croatian Law to protect personal data alongside fundamental freedoms followed Croatia’s independence from Yugoslavia (Budak et al., 2013). Moreover, the USA has gained independence from Britain whilst Australia has not. As such, a comparative study between USA and Australian residents would provide additional understanding for the influence of historical treatment of privacy on likewise attitudes.

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Table 1.1

*Summary of ‘Quality Assessment Tool for Quantitative Studies’ results for automated searches*

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Study | Selection Bias | Study Design | Confounders | Blinding | Data Collection Methods | Withdrawals and Dropouts | Global Rating |
| Bakan (2018) | Weak | Weak | Weak | Weak | Strong | Weak | Weak |
| Furini & Tamanini (2015) | Weak | Moderate | Weak | Weak | Weak | Weak | Weak |
| Ghosh & Singh (2016) | Weak | Weak | Weak | Weak | Weak | Weak | Weak |
| Ionescu, Anghel, & Jinga (2014) | Weak | Weak | Weak | Weak | Weak | Weak | Weak |
| Kezer, Sevi, Cemalcilar, & Baruh (2016) | Strong | Weak | Weak | Weak | Strong | Weak | Weak |
| Mathiyalakn, Heilman, & White (2014) | Moderate | Weak | Weak | Weak | Weak | Weak | Weak |
| Mishara, Draus, Leone, & Caputo (2012) | Weak | Weak | Moderate | Moderate | Weak | Weak | Weak |
| Pitkanen & Tuunainen (2012) | Weak | Weak | Weak | Weak | Weak | Weak | Weak |
| Pinchot & Paulett (2012) | Moderate | Weak | Weak | Weak | Weak | Weak | Weak |
| Tsay-Vogel, Shanahann, & Signorielli (2018) | Weak | Weak | Weak | Weak | Strong | Weak | Weak |

Table 1.2

*Summary of ‘Quality Assessment Tool for Quantitative Studies’ results for manual searches*

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Study | Selection Bias | Study Design | Confounders | Blinding | Data Collection Methods | Withdrawals and Dropouts | Global Rating |
| Australian Government (2017) | Moderate | Weak | Weak | Weak | Weak | Weak | Weak |
| Budak, Anic, & Rajh (2013) | Moderate | Weak | Weak | Weak | Strong | Weak | Weak |
| Kininmonth, Thompson, McGill, & Bunn (2018) | Weak | Weak | Weak | Weak | Strong | Weak | Weak |

Table 2.1

*Definition of Common Statistical Symbols*

|  |  |
| --- | --- |
| Symbol | Meaning |
| *M* | Mean |
| *SD* | Standard deviation |
| *P* | Statistical significance |
| *SE* | Standard error |

Table 3.1

*Corrected Item-Total Correlations and Cronbach’s Reliability Coefficients if Item Deleted for Facebook Personal Data Privacy Subscale*

|  |  |  |  |
| --- | --- | --- | --- |
| Item # | Item content | Corrected item-total correlation | Cronbach’s reliability coefficient if item deleted |
| 1 | All Facebook users’ personal information on Facebook, such as photos and videos, should only be visible to people they want to view them | .19 | .64 |
| 6 | My personal information on Facebook, such as photos and videos, should only be visible to people I want to view them | .36 | .58 |
| 11 | All Facebook users’ personal information on Facebook, such as ‘likes’ and comments, should only be visible to people they want to view them | .54 | .40 |
| 16 | My personal information on Facebook, such as ‘likes’ and comments, should only be visible to people I want to view them | .43 | .49 |
| 21\* | All personal information on Facebook should be easily observable by the general public | .39 | .51 |

*Note*.Cronbach’s reliability coefficient for Privacy Subscale = .59.

*Note*. \* Indicates reverse-scored item.

Table 3.2

*Corrected Item-Total Correlations and Cronbach’s Reliability Coefficient if Item Deleted for Facebook Personal Data Security Subscale*

|  |  |  |  |
| --- | --- | --- | --- |
| Item # | Item content | Corrected item-total correlation | Cronbach’s reliability coefficient if item deleted |
| 2 | All Facebook users’ personal information on Facebook, such as photos and videos, should only be attainable by people they want to have them | .28 | .71 |
| 7 | My personal information on Facebook, such as photos and videos, should only be attainable by people I want to have them | .53 | .64 |
| 12 | All Facebook users’ personal information on Facebook, such as ‘likes’ and comments, should only be attainable by people they want to have them | .66 | .52 |
| 17\* | All personal information on Facebook should be easily attainable by the general public | .31 | .69 |
| 22 | My personal information on Facebook, such as ‘likes’ and comments, should only be attainable by people I want to have them | .59 | .56 |

*Note*.Cronbach’s reliability coefficient for Security subscale = .68.

*Note*. \* Indicates reverse-scored item.

Table 3.3

*Corrected Item-Total Correlations and Cronbach’s Reliability Coefficient if Item Deleted for Facebook Personal Data Commerce Subscale*

|  |  |  |  |
| --- | --- | --- | --- |
| Item # | Item content | Corrected item-total correlation | Cronbach’s reliability coefficient if item deleted |
| 3 | Personal information stored on Facebook servers should not be sold without first obtaining the user’s Explicit Consent | .53 | .56 |
| 8 | Personal information stored on Facebook servers should not be transferred to other organisations without first obtaining the user’s Explicit Consent | .57 | .55 |
| 13\* | The trade of personal information stored on Facebook servers should be allowable without first obtaining the user’s Explicit Consent | .27 | .87 |
| 18 | Personal information stored on Facebook servers should not be traded without first obtaining the user’s Explicit Consent | .65 | .48 |
| 23 | Personal information stored on Facebook servers should not be used for profit without first obtaining the user’s Explicit Consent | .59 | .50 |

*Note*.Cronbach’s reliability coefficient for Facebook Explicit Consent subscale = .62.

*Note*. \* Indicates reverse-scored item.

Table 3.4

*Corrected Item-Total Correlations and Cronbach’s Reliability Coefficient if Item Deleted for Facebook Metadata Subscale*

|  |  |  |  |
| --- | --- | --- | --- |
| Item # | Item content | Corrected item-total correlation | Cronbach’s reliability coefficient if item deleted |
| 4 | The times of all Facebook users’ interactions on Facebook, such as ‘likes’ and comments, should not be usable by the general public to track anyone’s geographic whereabouts | .29 | .37 |
| 9\* | All Facebook users’ interactions on Facebook, such as ‘shares’ and ‘follows’, should be usable by the general public to identify anyone | .14 | .53 |
| 14 | All the information people upload to Facebook, such as photos and videos, should not be usable by the general public to track anyone’s geographic whereabouts | .18 | .42 |
| 19 | The dates of all Facebook users’ interactions on Facebook, such as ‘likes’ and comments, should not be usable by the general public to identify others | .31 | .34 |
| 24 | The information anyone uploads to Facebook, such as photos and videos, should not be usable by the general public to identify others | .46 | .29 |

*Note*.Cronbach’s reliability coefficient for Facebook Metadata subscale = .44.

*Note*. \* Indicates reverse-scored item.

Table 3.5

*Corrected Item-Total Correlations and Cronbach’s Reliability Coefficient if Item Deleted for Facebook Accountability Subscale*

|  |  |  |  |
| --- | --- | --- | --- |
| Item # | Item content | Corrected item-total correlation | Cronbach’s reliability coefficient if item deleted |
| 5\* | I should be mainly responsible if people access my personal information from Facebook servers without my Explicit Consent | .12 | .85 |
| 10 | If my personal information is accessed without Facebook’s authorisation from Facebook’s servers, Facebook should be mainly accountable | .62 | .57 |
| 15 | If my personal information is obtained without my Explicit Consent from Facebook servers, Facebook should be primarily to blame | .69 | .53 |
| 20 | It should be mainly Facebook’s fault if my personal information is obtained without their knowledge from Facebook servers | .51 | .59 |
| 25 | Facebook should be liable for penalties if my personal information is obtained without my Explicit Consent from Facebook servers | .58 | .59 |

*Note*.Cronbach’s reliability coefficient for Facebook Accountability subscale = .68.

*Note*. \* Indicates reverse-scored item

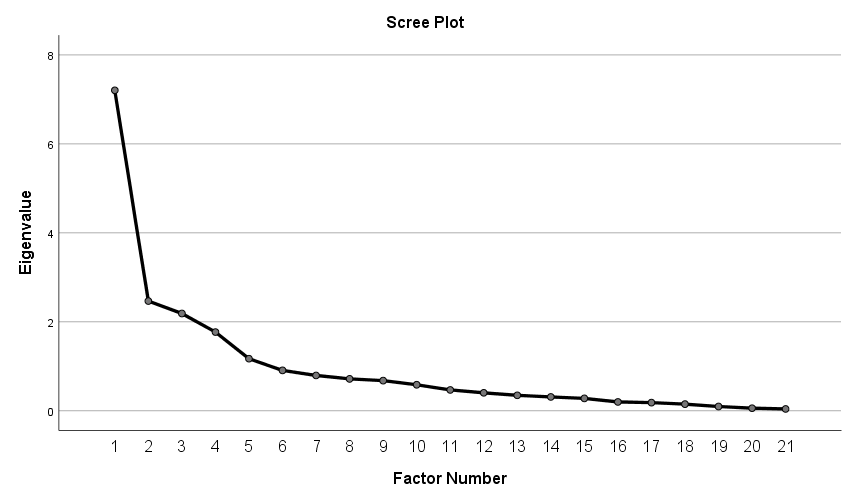
Table 3.6

*Corrected Item-Total Correlations and Cronbach’s Reliability Coefficient if Item Deleted for Non-Factor Analysed 25-item Questionnaire*

|  |  |  |  |
| --- | --- | --- | --- |
| Item # | Item content | Corrected item-total correlation | Cronbach’s reliability coefficient if item deleted |
| 1 | All Facebook users’ personal information on Facebook, such as photos and videos, should only be visible to people they want to view them | .15 | .86 |
| 2 | All Facebook users’ personal information on Facebook, such as photos and videos, should only be attainable by people they want to have them | .33 | .85 |
| 3 | Personal information stored on Facebook servers should not be sold without first obtaining the user’s Explicit Consent | .42 | .85 |
| 4 | The times of all Facebook users’ interactions on Facebook, such as ‘likes’ and comments, should not be usable by the general public to track anyone’s geographic whereabouts | .38 | .85 |
| 5\* | I should be mainly responsible if people access my personal information from Facebook servers without my Explicit Consent | .25 | .86 |
| 6 | My personal information on Facebook, such as photos and videos, should only be visible to people I want to view them | .52 | .85 |
| 7 | My personal information on Facebook, such as photos and videos, should only be attainable by people I want to have them | .61 | .84 |
| 8 | Personal information stored on Facebook servers should not be transferred to other organisations without first obtaining the user’s Explicit Consent | .55 | .85 |
| 9\* | All Facebook users’ interactions on Facebook, such as ‘shares’ and ‘follows’, should be usable by the general public to identify anyone | .39 | .85 |
| 10 | If my personal information is accessed without Facebook’s authorisation from Facebook’s servers, Facebook should be mainly accountable | .34 | .85 |
| 11 | All Facebook users’ personal information on Facebook, such as ‘likes’ and comments, should only be visible to people they want to view them | .42 | .85 |
| 12 | All Facebook users’ personal information on Facebook, such as ‘likes’ and comments, should only be attainable by people they want to have them | .67 | .84 |
| 13\* | The trade of personal information stored on Facebook servers should be allowable without first obtaining the user’s Explicit Consent | .24 | .86 |
| 14 | All the information people upload to Facebook, such as photos and videos, should not be usable by the general public to track anyone’s geographic whereabouts | .31 | .85 |
| 15 | If my personal information is obtained without my Explicit Consent from Facebook servers, Facebook should be primarily to blame | .54 | .84 |
| 16 | My personal information on Facebook, such as ‘likes’ and comments, should only be visible to people I want to view them | .51 | .84 |
| 17\* | All personal information on Facebook should be easily attainable by the general public | .51 | .84 |
| 18 | Personal information stored on Facebook servers should not be traded without first obtaining the user’s Explicit Consent | .63 | .84 |
| 19 | The dates of all Facebook users’ interactions on Facebook, such as ‘likes’ and comments, should not be usable by the general public to identify others | .49 | .84 |
| 20 | It should be mainly Facebook’s fault if my personal information is obtained without their knowledge from Facebook servers | .30 | .85 |
| 21\* | All personal information on Facebook should be easily observable by the general public | .71 | .84 |
| 22 | My personal information on Facebook, such as ‘likes’ and comments, should only be attainable by people I want to have them | .62 | .84 |
| 23 | Personal information stored on Facebook servers should not be used for profit without first obtaining the user’s Explicit Consent | .65 | .84 |
| 24 | The information anyone uploads to Facebook, such as photos and videos, should not be usable by the general public to identify others | .63 | .84 |
| 25 | Facebook should be liable for penalties if my personal information is obtained without my Explicit Consent from Facebook servers | .51 | .84 |

*Note*.Cronbach’s reliability coefficient for 25-item questionnaire = .85.

*Note*. \* Indicates reverse-scored items.



*Figure 1.* Scree-Plot during Initial Exploratory Factor Analysis

Table 4.1

*Five Factor Solution for 25-item Questionnaire*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Item # | Item content | Factor 1 | Factor 2 | Factor 3 | Factor 4 | Factor 5 |
| 1 | All Facebook users’ personal information on Facebook, such as photos and videos, should only be visible to people they want to view them |  |  |  |  |  |
| 2 | All Facebook users’ personal information on Facebook, such as photos and videos, should only be attainable by people they want to have them | .36 |  | .32 |  | .48 |
| 3 | Personal information stored on Facebook servers should not be sold without first obtaining the user’s Explicit Consent | .50 |  |  |  |  |
| 4 | The times of all Facebook users’ interactions on Facebook, such as ‘likes’ and comments, should not be usable by the general public to track anyone’s geographic whereabouts | .46 |  |  |  |  |
| 5\* | I should be mainly responsible if people access my personal information from Facebook servers without my Explicit Consent |  |  |  | .50 |  |
| 6 | My personal information on Facebook, such as photos and videos, should only be visible to people I want to view them | .59 |  |  |  |  |
| 7 | My personal information on Facebook, such as photos and videos, should only be attainable by people I want to have them | .70 |  |  |  |  |
| 8 | Personal information stored on Facebook servers should not be transferred to other organisations without first obtaining the user’s Explicit Consent | .66 | .41 |  |  |  |
| 9\* | All Facebook users’ interactions on Facebook, such as ‘shares’ and ‘follows’, should be usable by the general public to identify anyone | .36 |  | .34 | .54 |  |
| 10 | If my personal information is accessed without Facebook’s authorisation from Facebook’s servers, Facebook should be mainly accountable | .39 |  | -.62 |  |  |
| 11 | All Facebook users’ personal information on Facebook, such as ‘likes’ and comments, should only be visible to people they want to view them | .47 | -.57 |  |  |  |
| 12 | All Facebook users’ personal information on Facebook, such as ‘likes’ and comments, should only be attainable by people they want to have them | .75 | -.55 |  |  |  |
| 13\* | The trade of personal information stored on Facebook servers should be allowable without first obtaining the user’s Explicit Consent |  |  | .47 |  |  |
| 14 | All the information people upload to Facebook, such as photos and videos, should not be usable by the general public to track anyone’s geographic whereabouts | .37 |  |  |  |  |
| 15 | It should be mainly Facebook’s fault if my personal information is obtained without their knowledge from Facebook servers | .58 |  | -.46 | .33 |  |
| 16 | My personal information on Facebook, such as ‘likes’ and comments, should only be visible to people I want to view them | .57 | -.64 |  |  |  |
| 17\* | All personal information on Facebook should be easily attainable by the general public | .45 |  |  | .48 |  |
| 18 | Personal information stored on Facebook servers should not be traded without first obtaining the user’s Explicit Consent | .75 | .43 |  |  |  |
| 19 | The dates of all Facebook users’ interactions on Facebook, such as ‘likes’ and comments, should not be usable by the general public to identify others | .55 |  |  |  |  |
| 20 | It should be mainly Facebook’s fault if my personal information is obtained without their knowledge from Facebook servers | .40 |  | -.65 |  |  |
| 21\* | All personal information on Facebook should be easily observable by the general public | .70 |  | .32 |  |  |
| 22 | My personal information on Facebook, such as ‘likes’ and comments, should only be attainable by people I want to have them | .71 | -.57 |  |  |  |
| 23 | Personal information stored on Facebook servers should not be used for profit without first obtaining the user’s Explicit Consent | .76 | .34 |  |  |  |
| 24 | The information anyone uploads to Facebook, such as photos and videos, should not be usable by the general public to identify others | .72 |  |  |  |  |
| 25 | Facebook should be liable for penalties if my personal information is obtained without my Explicit Consent from Facebook servers | .54 |  | -.51 |  |  |

*Note*. Factor loadings <.32 not shown.

*Note.* \* Indicates reverse-scored items.

Table 3.2

*5-Factor Solution Pattern Matrix*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Item # | Item content | Explicit Consent | Behaviour Autonomy | Facebook Culpability | Commodification | Visage Autonomy |
| 3 | Personal information stored on Facebook servers should not be sold without first obtaining the user’s Explicit Consent | .64 |  |  |  |  |
| 8 | Personal information stored on Facebook servers should not be transferred to other organisations without first obtaining the user’s Explicit Consent | .80 |  |  |  |  |
| 18 | Personal information stored on Facebook servers should not be traded without first obtaining the user’s Explicit Consent | .97 |  |  |  |  |
| 23 | Personal information stored on Facebook servers should not be used for profit without first obtaining the user’s Explicit Consent | .68 |  |  |  |  |
| 11 | All Facebook users’ personal information on Facebook, such as ‘likes’ and comments, should only be visible to people they want to view them |  | -.76 |  |  |  |
| 12 | All Facebook users’ personal information on Facebook, such as ‘likes’ and comments, should only be attainable by people they want to have them |  | -.87 |  |  |  |
| 16 | My personal information on Facebook, such as ‘likes’ and comments, should only be visible to people I want to view them |  | -.85 |  |  |  |
| 22 | My personal information on Facebook, such as ‘likes’ and comments, should only be attainable by people I want to have them |  | -.92 |  |  |  |
| 10 | If my personal information is accessed without Facebook’s authorisation from Facebook’s servers, Facebook should be mainly accountable |  |  | -.80 |  |  |
| 15 | If my personal information is obtained without my Explicit Consent from Facebook servers, Facebook should be primarily to blame |  |  | -.67 |  |  |
| 20 | It should be mainly Facebook’s fault if my personal information is obtained without their knowledge from Facebook servers |  |  | -.78 |  |  |
| 25 | Facebook should be liable for penalties if my personal information is obtained without my Explicit Consent from Facebook servers |  |  | -.77 |  |  |
| 5\* | I should be mainly responsible if people access my personal information from Facebook servers without my Explicit Consent |  |  |  | .66 |  |
| 9\* | All Facebook users’ interactions on Facebook, such as ‘shares’ and ‘follows’, should be usable by the general public to identify anyone |  |  |  | .70 |  |
| 17\* | All personal information on Facebook should be easily attainable by the general public |  |  |  | .64 |  |
| 21\* | All personal information on Facebook should be easily observable by the general public |  |  |  | .60 |  |
| 1 | All Facebook users’ personal information on Facebook, such as photos and videos, should only be visible to people they want to view them |  |  |  |  | .51 |
| 2 | All Facebook users’ personal information on Facebook, such as photos and videos, should only be attainable by people they want to have them |  |  |  |  | .64 |
| 14 | All the information people upload to Facebook, such as photos and videos, should not be usable by the general public to track anyone’s geographic whereabouts |  |  |  |  | .32 |

*Note*.Factor loadings <.32 not shown.

*Note*.\* Indicates reverse-scored item.

Table 5.1

*Corrected Item-Total Correlations and Cronbach’s Reliability Coefficient if Item Deleted for Explicit Consent Subscale*

|  |  |  |  |
| --- | --- | --- | --- |
| Item # | Item content | Corrected item-total correlation | Cronbach’s reliability coefficient if item deleted |
| 3 | Personal information stored on Facebook servers should not be sold without first obtaining the user’s Explicit Consent | .59 | .89 |
| 8 | Personal information stored on Facebook servers should not be transferred to other organisations without first obtaining the user’s Explicit Consent | .75 | .84 |
| 18 | Personal information stored on Facebook servers should not be traded without first obtaining the user’s Explicit Consent | .89 | .76 |
| 23 | Personal information stored on Facebook servers should not be used for profit without first obtaining the user’s Explicit Consent | .76 | .83 |

*Note*.Cronbach’s reliability coefficient for Explicit Consent Subscale = .87.

Table 5.2

*Corrected Item-Total Correlations and Cronbach’s Reliability Coefficient if Item Deleted for Behaviour Autonomy Subscale*

|  |  |  |  |
| --- | --- | --- | --- |
| Item # | Item content | Corrected item-total correlation | Cronbach’s reliability coefficient if item deleted |
| 11 | All Facebook users’ personal information on Facebook, such as ‘likes’ and comments, should only be visible to people they want to view them | .72 | .92 |
| 12 | All Facebook users’ personal information on Facebook, such as ‘likes’ and comments, should only be attainable by people they want to have them | .89 | .85 |
| 16 | My personal information on Facebook, such as ‘likes’ and comments, should only be visible to people I want to view them | .77 | .89 |
| 22 | My personal information on Facebook, such as ‘likes’ and comments, should only be attainable by people I want to have them | .86 | .86 |

*Note*.Cronbach’s reliability coefficient for Behaviour Autonomy subscale = .91.

Table 5.3

*Corrected Item-Total Correlations and Cronbach’s Reliability Coefficient if Item Deleted for Facebook Culpability Subscale*

|  |  |  |  |
| --- | --- | --- | --- |
| Item # | Item content | Corrected item-total correlation | Cronbach’s reliability coefficient if item deleted |
| 10 | If my personal information is accessed without Facebook’s authorisation from Facebook’s servers, Facebook should be mainly accountable | .72 | .80 |
| 15 | It should be mainly Facebook’s fault if my personal information is obtained without their knowledge from Facebook servers | .65 | .82 |
| 20 | It should be mainly Facebook’s fault if my personal information is obtained without their knowledge from Facebook servers | .71 | .80 |
| 25 | Facebook should be liable for penalties if my personal information is obtained without my Explicit Consent from Facebook servers | .71 | .80 |

*Note*.Cronbach’s reliability coefficient for Facebook Culpability subscale = .85.

Table 5.4

*Corrected Item-Total Correlations and Cronbach’s Reliability Coefficient if Item Deleted for Commodification Subscale*

|  |  |  |  |
| --- | --- | --- | --- |
| Item # | Item content | Corrected item-total correlation | Cronbach’s reliability coefficient if item deleted |
| 5\* | I should be mainly responsible if people access my personal information from Facebook servers without my Explicit Consent | .51 | .68 |
| 9\* | All Facebook users’ interactions on Facebook, such as ‘shares’ and ‘follows’, should be usable by the general public to identify anyone | .62 | .61 |
| 17\* | All personal information on Facebook should be easily attainable by the general public | .39 | .67 |
| 21\* | All personal information on Facebook should be easily observable by the general public | .37 | .68 |

*Note*.Cronbach’s reliability coefficient for Commodification subscale = .72.

*Note*. \* Indicates reverse-scored items.

Table 5.5

*Corrected Item-Total Correlations and Cronbach’s Reliability Coefficient if Item Deleted for Visage Autonomy Subscale*

|  |  |  |  |
| --- | --- | --- | --- |
| Item # | Item content | Corrected item-total correlation | Cronbach’s reliability coefficient if item deleted |
| 1 | All Facebook users’ personal information on Facebook, such as photos and videos, should only be visible to people they want to view them | .28 | .44 |
| 2 | All Facebook users’ personal information on Facebook, such as photos and videos, should only be attainable by people they want to have them | .43 | .21 |
| 14 | All the information people upload to Facebook, such as photos and videos, should not be usable by the general public to track anyone’s geographic whereabouts | .24 | .53 |

*Note*.Cronbach’s reliability coefficient for Visage Autonomy subscale = .49.

Table 5.6

*Corrected Item-Total Correlations and Cronbach’s Reliability Coefficient if Item Deleted for Commodi-5*

|  |  |  |  |
| --- | --- | --- | --- |
| Item # | Item content | Corrected item-total correlation | Cronbach’s reliability coefficient if item deleted |
| 1 | All Facebook users’ personal information on Facebook, such as photos and videos, should only be visible to people they want to view them | .15 | .82 |
| 2 | All Facebook users’ personal information on Facebook, such as photos and videos, should only be attainable by people they want to have them | .26 | .82 |
| 3 | Personal information stored on Facebook servers should not be sold without first obtaining the user’s Explicit Consent | .38 | .82 |
| 5\* | I should be mainly responsible if people access my personal information from Facebook servers without my Explicit Consent | .27 | .83 |
| 8 | Personal information stored on Facebook servers should not be transferred to other organisations without first obtaining the user’s Explicit Consent | .49 | .81 |
| 9\* | All Facebook users’ interactions on Facebook, such as ‘shares’ and ‘follows’, should be usable by the general public to identify anyone | .36 | .82 |
| 10 | If my personal information is accessed without Facebook’s authorisation from Facebook’s servers, Facebook should be mainly accountable | .36 | .81 |
| 11 | All Facebook users’ personal information on Facebook, such as ‘likes’ and comments, should only be visible to people they want to view them | .44 | .81 |
| 12 | All Facebook users’ personal information on Facebook, such as ‘likes’ and comments, should only be attainable by people they want to have them | .67 | .80 |
| 14 | All the information people upload to Facebook, such as photos and videos, should not be usable by the general public to track anyone’s geographic whereabouts | .29 | .82 |
| 15 | If my personal information is obtained without my Explicit Consent from Facebook servers, Facebook should be primarily to blame | .58 | .80 |
| 16 | My personal information on Facebook, such as ‘likes’ and comments, should only be visible to people I want to view them | .51 | .81 |
| 17\* | All personal information on Facebook should be easily attainable by the general public | .46 | .81 |
| 18 | Personal information stored on Facebook servers should not be traded without first obtaining the user’s Explicit Consent | .58 | .81 |
| 20 | It should be mainly Facebook’s fault if my personal information is obtained without their knowledge from Facebook servers | .33 | .81 |
| 21\* | All personal information on Facebook should be easily observable by the general public | .69 | .80 |
| 22 | My personal information on Facebook, such as ‘likes’ and comments, should only be attainable by people I want to have them | .62 | .80 |
| 23 | Personal information stored on Facebook servers should not be used for profit without first obtaining the user’s Explicit Consent | .60 | .81 |
| 25 | Facebook should be liable for penalties if my personal information is obtained without my Explicit Consent from Facebook servers | .54 | .80 |

*Note*.Cronbach’s reliability coefficient for Commodi-5 = .82.

*Note*.\* Indicates reverse-scored item.

Table 6.1

*Skewness and Kurtosis of Commodi-5 and Subscales by Facebook Account Status*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | *M* | *SD* | Skewness (*SE*) | Kurtosis (*SE*) | 95% CI lower | 95% CI upper |
| Yes, I have a Facebook Accounta |  |  |  |  |  |  |
| Commodi-5 | 10.61 | 9.36 | 1.34(.35) | 2.12(.69) | 7.83 | 13.39 |
| Explicit Consent | .48 | 1.35 | 3.40(.35) | 12.72(.69) | .08 | .88 |
| Behaviour Autonomy | 1.67 | 2.70 | 1.48(.35) | 1.26(.69) | .87 | 2.48 |
| Facebook Culpability | 1.87 | 2.58 | 1.42(.35) | 1.31(.69) | 1.10 | 2.64 |
| Commodification | 3.54 | 3.39 | .78(.35) | -.08(.69) | 2.54 | 4.55 |
| Visage Autonomy | 1.11 | 1.98 | 1.87(.35) | 2.78(.69) | .52 | 1.70 |
| No, I do not have a Facebook accountb |  |  |  |  |  |  |
| Commodi-5 | 9.00 | 8.29 | .89(.79) | .72(1.59) | 1.34 | 16.66 |
| Explicit Consent | 1.00 | 1.29 | .65(.79) | -1.70(1.59) | -.19 | 2.19 |
| Behaviour Autonomy | 1.00 | 2.24 | 2.50(.79) | 6.36(1.59) | -1.07 | 3.07 |
| Facebook Culpability | 2.00 | 2.00 | .53(.79) | -1.55(1.59) | .15 | 3.85 |
| Commodification | 2.71 | 2.43 | .07(.79) | -1.87(1.59) | .47 | 4.96 |
| Visage Autonomy | .86 | 1.46 | 1.23(.79) | -.84(1.59) | -.50 | 2.21 |
| Yes, I have a Facebook account, but it is deactivatedc |  |  |  |  |  |  |
| Commodi-5 | 5.50 | .71 | - | - | -.85 | 11.85 |
| Explicit Consent | .00 | .00 | - | - | .00 | .00 |
| Behaviour Autonomy | 1.00 | 1.41 | - | - | -11.71 | 13.71 |
| Facebook Culpability | 2.50 | 3.54 | - | - | -29.27 | 34.27 |
| Commodification | 2.00 | 2.83 | - | - | -23.41 | 27.41 |
| Visage Autonomy | .00 | .00 | - | - | .00 | .00 |

*Note*.- Indicates a value which could not be computed due to too few data.

a*n* = 48 for Yes, I have a Facebook account. b*n* = 7 for No, I do not have a Facebook account. c*n* = 2 for Yes, I have a Facebook account, but it is deactivated.

Table 6.2

*Skewness and Kurtosis of Commodi-5 and Subscales by Age*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | *M* | *SD* | Skewness (*SE*) | Kurtosis (*SE*) | 95% CI lower | 95% CI upper |
| 18 to 40a |  |  |  |  |  |  |
| Commodi-5 | 12.79 | 9.55 | 1.32(.41) | 1.89(.80) | 9.40 | 16.17 |
| Explicit Consent | .67 | 1.55 | 2.78(.41) | 8.34(.80) | .12 | 1.22 |
| Behaviour Autonomy | 1.97 | 2.60 | 1.00(.41) | -.27(.80) | 1.05 | 2.89 |
| Facebook Culpability | 2.24 | 2.75 | 1.27(.41) | .80(.80) | 1.27 | 3.22 |
| Commodification | 4.52 | 3.38 | .47(.41) | -.22(.80) | 3.32 | 5.71 |
| Visage Autonomy | 1.12 | 2.10 | 2.00(.41) | 3.20(.80) | .38 | 1.87 |
| 41 and Overb |  |  |  |  |  |  |
| Commodi-5 | 6.36 | 6.74 | 1.17(.49) | .81(.95) | 3.38 | 9.35 |
| Explicit Consent | .32 | .84 | 2.50(.49) | 5.22(.95) | -.05 | .69 |
| Behaviour Autonomy | .95 | 2.52 | 2.90(.49) | 8.29(.95) | -.16 | 2.07 |
| Facebook Culpability | 1.41 | 2.02 | .99(.49) | -.85(.95) | .52 | 2.30 |
| Commodification | 1.68 | 2.15 | 1.19(.49) | .46(.95) | .73 | 2.63 |
| Visage Autonomy | 91 | 1.54 | 1.37(.49) | .15(.95) | .23 | 1.59 |

a*n* = 34 for 18 to 40. b*n* = 23 for 41 and over.

Table 6.3

*Skewness and Kurtosis of Commodi-5 and Subscales by Sex*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | *M* | *SD* | Skewness (*SE*) | Kurtosis (*SE*) | 95% CI lower | 95% CI upper |
| Femalea |  |  |  |  |  |  |
| Commodi-5 | 10.14 | 9.18 | 1.76(.40) | 3.93(.78) | 6.99 | 13.30 |
| Explicit Consent | .66 | 1.53 | 2.75(.40) | 8.28(.78) | .13 | 1.18 |
| Behaviour Autonomy | 1.49 | 2.74 | 1.77(.40) | 2.12(.78) | .55 | 2.43 |
| Facebook Culpability | 2.11 | 2.65 | 1.32(.40) | 1.21(.78) | 1.20 | 3.02 |
| Commodification | 3.06 | 2.74 | .73(.40) | -.21(.78) | 2.11 | 4.00 |
| Visage Autonomy | .97 | 1.72 | 1.66(.40) | 1.54(.78) | .38 | 1.56 |
| Maleb |  |  |  |  |  |  |
| Commodi-5 | 10.79 | 9.06 | .61(.52) | -.44(1.01) | 6.42 | 15.16 |
| Explicit Consent | .32 | .82 | 2.70(.52) | 6.78(1.01) | -.08 | .71 |
| Behaviour Autonomy | 1.79 | 2.42 | 1.12(.52) | .53(1.01) | .62 | 2.95 |
| Facebook Culpability | 1.53 | 2.27 | 1.20(.52) | -.19(1.01) | .43 | 2.62 |
| Commodification | 4.16 | 3.99 | .57(.52) | -.44(1.01) | 2.23 | 6.08 |
| Visage Autonomy | 1.21 | 2.22 | 2.10(.51) | 4.11(1.01) | .14 | 2.28 |

*Note*.Skewness and kurtosis could not be computed for participants who self-reported as ‘other’ (*n* = 1).

a*n* = 37 for female. b*n* = 19 for male.

Table 6.4

*Skewness and Kurtosis of Commodi-5 and Subscales by Facebook Use*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | *M* | *SD* | Skewness (*SE*) | Kurtosis (*SE*) | 95% CI lower | 95% CI upper |
| Nevera |  |  |  |  |  |  |
| Commodi-5 | 9.50 | 3.70 | -.48(1.01) | -2.72(2.62) | 3.62 | 15.38 |
| Explicit Consent | 1.25 | 1.50 | .37(1.01) | -3.90(2.62) | -1.14 | 3.64 |
| Behaviour Autonomy | .25 | .50 | 2.00(1.01) | 4.00(2.62) | -.55 | 1.05 |
| Facebook Culpability | 2.50 | 1.91 | .86(1.01) | -1.29(2.62) | -.55 | 5.55 |
| Commodification | 3.00 | 2.16 | -1.19(1.01) | 1.5(2.62) | -.44 | 6.44 |
| Visage Autonomy | .75 | 1.50 | 2.00(1.01) | 4.00(2.62) | -1.64 | 3.14 |
| Rarelyb |  |  |  |  |  |  |
| Commodi-5 | 8.75 | 10.50 | 1.61(1.01) | 3.01(2.62) | -7.96 | 25.46 |
| Explicit Consent | .50 | 1.00 | 2.00(1.01) | 4.00(2.62) | -1.09 | 2.09 |
| Behaviour Autonomy | 2.00 | 2.83 | 1.41(1.01) | 1.50(2.62) | -2.50 | 6.50 |
| Facebook Culpability | 2.25 | 2.63 | .12(1.01) | -5.29(2.62) | -1.93 | 6.43 |
| Commodification | 2.50 | 3.00 | .37(1.01) | -3.90(2.62) | -2.27 | 7.27 |
| Visage Autonomy | .75 | 1.50 | 2.00(1.01) | 4.00(2.62) | -1.64 | 3.14 |
| Occasionallyc |  |  |  |  |  |  |
| Commodi-5 | 9.40 | 9.19 | 1.49(.69) | 2.92(1.33) | 2.82 | 15.98 |
| Explicit Consent | .30 | .95 | 3.16(.69) | 10.00(1.33) | -.38 | .98 |
| Behaviour Autonomy | 1.70 | 2.75 | 1.63(.69) | 2.07(1.33) | -.27 | 3.67 |
| Facebook Culpability | 2.40 | 3.47 | 1.43(.69) | 1.26(1.33) | -.08 | 4.88 |
| Commodification | 2.10 | 3.11 | 2.13(.69) | 5.00(1.33) | -.12 | 4.32 |
| Visage Autonomy | 1.40 | 2.07 | 1.03(.69) | -.95(1.33) | -.08 | 2.88 |
| Frequentlyd |  |  |  |  |  |  |
| Commodfi-5 | 10.88 | 9.95 | 1.35(.41) | 2.11(.81) | 7.29 | 14.46 |
| Explicit Consent | .59 | 1.52 | 3.10(.41) | 10.32(.81) | .05 | 1.14 |
| Behaviour Autonomy | 1.56 | 2.78 | 1.67(.41) | 1.88(.81) | .56 | 2.57 |
| Facebook Culpability | 1.66 | 2.13 | 1.12(.41) | .17(.81) | .89 | 2.43 |
| Commodification | 3.94 | 3.56 | .62(.41) | -.36(.81) | 2.66 | 5.22 |
| Visage Autonomy | 1.13 | 2.08 | 2.01(.41) | 3.46(.81) | .38 | 1.87 |
| Constantlye |  |  |  |  |  |  |
| Commodi-5 | 9.40 | 6.69 | .24(.91) | -1.92(2.00) | 1.09 | 17.71 |
| Explicit Consent | .00 | .00 | - | - | .00 | .00 |
| Behaviour Autonomy | 2.00 | 2.35 | .58(.91) | -2.63(2.00) | -.91 | 4.91 |
| Facebook Culpability | 1.80 | 3.49 | 2.15(.91) | 4.68(2.00) | -2.54 | 6.14 |
| Commodification | 3.40 | 2.19 | -.85(.91) | 1.75(2.00) | .68 | 6.12 |
| Visage Autonomy | .20 | .45 | 2.24(.91) | 5.00(2.00) | -.36 | .76 |

a*n* = 4 for never. b*n* = 4 for rarely. c*n* = 10 for occasionally. d*n* = 33 for frequently. e*n* = 8 for constantly.

Table 7.1

*Descriptive Statistics for ANOVA comparing Commodi-5 and Subscale mean scores by Facebook Account Status*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | *M*(*SD*) | Minimum/maximum | 95% CI lower | 95% CI upper |
| Commodi-5 |  |  |  |  |
| Yes, I have a Facebook accounta | 10.61(9.36) | .00/42.00 | 7.83 | 13.39 |
| No, I do not have a Facebook accountb | 9.00(8.29) | .00/24.00 | 1.34 | 16.66 |
| Yes, I have a Facebook account, but it is deactivatedc | 5.50(.71) | 5.00/6.00 | -.85 | 11.85 |
| Totald | 10.22(9.04) | .00/42.00 | 7.77 | 12.66 |
| Explicit Consent |  |  |  |  |
| Yes, I have a Facebook accounta | .48(1.35) | .00/7.00 | .08 | .88 |
| No, I do not have a Facebook accountb | 1.00(1.29) | .00/3.00 | -.19 | 2.19 |
| Yes, I have a Facebook account, but it is deactivatedc | .00(.00) | .00/.00 | .00 | .00 |
| Totald | .53(1.32) | .00/7.00 | .17 | .88 |
| Behaviour Autonomy |  |  |  |  |
| Yes, I have a Facebook accounta | 1.67(2.70) | .00/10.00 | .87 | 2.48 |
| No, I do not have a Facebook accountb | 2.00(2.24) | .00/6.00 | -1.07 | 3.07 |
| Yes, I have a Facebook account, but it is deactivatedc | 1.00(1.41) | .00/2.00 | -11.71 | 13.71 |
| Totald | 1.56(2.59) | .00/10.00 | .35 | .86 |
| Facebook Culpability |  |  |  |  |
| Yes, I have a Facebook accounta | 1.87(2.58) | .00/10.00 | 1.10 | 2.64 |
| No, I do not have a Facebook accountb | 2.00(2.00) | .00/5.00 | .15 | 3.85 |
| Yes, I have a Facebook account, but it is deactivatedc | 2.50(3.54) | .00/5.00 | -29.67 | 34.27 |
| Totald | 1.91(2.50) | .00/10.00 | 1.23 | 2.58 |
| Commodification |  |  |  |  |
| Yes, I have a Facebook accounta | 3.54(3.39) | .00/13.00 | 2.54 | 4.55 |
| No, I do not have a Facebook accountb | 2.71(2.43) | .00/6.00 | .47 | 4.96 |
| Yes, I have a Facebook account, but it is deactivatedc | 2.00(2.83) | .00/4.00 | -23.41 | 27.41 |
| Totald | 3.38(3.25) | .00/13.00 | 2.50 | 4.26 |
| Visage Autonomy |  |  |  |  |
| Yes, I have a Facebook accounta | 1.11(1.98) | .00/8.00 | .52 | 1.70 |
| No, I do not have a Facebook accountb | .86(1.46) | .00/3.00 | -.50 | 2.21 |
| Yes, I have a Facebook account, but it is deactivatedc | .00(.00) | .00/.00 | .00 | .00 |
| Totald | 1.04(1.89) | .00/8.00 | .53 | 1.55 |

a*n* = 46 for Yes I have a Facebook account. b*n* = 7 for No, I do not have a Facebook account. c*n* = 2 for Yes, I have a Facebook account, but it is deactivated. d*n* = 55 for total.

Table 7.2

*Descriptive Statistics for ANOVA comparing Commodi-5 and Subscale mean scores by Sex*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | *M*(*SD*) | Minimum/Maximum | 95% CI lower | 95% CI upper |
| Commodi-5 |  |  |  |  |
| Femalea | 10.14(9.18) | .00/42.00 | 7.00 | 13.30 |
| Maleb | 10.79(9.06) | .00/31.00 | 6.42 | 15.16 |
| Otherc | 2.00(-) | 2.00/2.00 | - | - |
| Totald | 10.22(9.04) | .00/42.00 | 7.77 | 12.66 |
| Explicit Consent |  |  |  |  |
| Femalea | .66(1.53) | .00/7.00 | .13 | 1.18 |
| Maleb | .32(.82) | .00/3.00 | -.08 | .71 |
| Otherc | .00(-) | .00/.00 | - | - |
| Totald | .53(1.32) | .00/7.00 | .17 | .88 |
| Behaviour Autonomy |  |  |  |  |
| Femalea | 1.49(2.74) | .00/10.00 | .55 | 2.43 |
| Maleb | 1.79(2.42) | .00/8.00 | .63 | 2.95 |
| Otherc | .00(-) | .00/.00 | - | - |
| Totald | 1.56(2.59) | .00/10.00 | .86 | 2.27 |
| Facebook Culpability |  |  |  |  |
| Femalea | 2.11(2.65) | .00/10.00 | 1.20 | 3.03 |
| Maleb | 1.53(2.27) | .00/6.00 | .43 | 2.62 |
| Otherc | 2.00(-) | 2.00/2.00 | - | - |
| Totald | 1.91(2.50) | .00/10.00 | 1.23 | 2.58 |
| Commodification |  |  |  |  |
| Femalea | 3.06(2.74) | .00/10.00 | 2.11 | 4.00 |
| Maleb | 4.16(3.99) | .00/13.00 | 2.23 | 6.08 |
| Otherc | .00(-) | .00/.00 | - | - |
| Totald | 3.38(3.25) | .00/13.00 | 2.50 | 4.26 |
| Visage Autonomy |  |  |  |  |
| Femalea | .97(1.72) | .00/6.00 | .38 | 1.56 |
| Maleb | 1.21(2.23) | .00/8.00 | .14 | 2.28 |
| Otherc | .00(-) | .00/.00 | - | - |
| Totald | 1.04(1.89) | .00/8.00 | .53 | 1.55 |

*Note.* – indicates statistic could not be computed.

a*n* = 35 for female. b*n* = 19 for male. c*n* = 1 for other. d*n* = 55 for total.

Table 7.3

*Descriptive Statistics for ANOVA comparing Commodi-5 and Subscale mean scores by Facebook use*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | *M*(*SD*) | Minimum/Maximum | 95% CI lower | 95% CI upper |
| Commodi-5 |  |  |  |  |
| Nevera | 9.50(3.70) | 5.00/13.00 | 3.62 | 15.38 |
| Rarelyb | 8.75(10.50) | .00/24.00 | -7.96 | 25.46 |
| Occasionallyc | 9.40(9.19) | .00/31.00 | 2.82 | 15.98 |
| Frequentlyd | 10.88(9.95) | .00/42.00 | 7.29 | 14.46 |
| Constantlye | 9.40(6.69) | 2.00/18.00 | 1.09 | 17.71 |
| Totalf | 10.22(9.04) | .00/42.00 | 7.77 | 12.66 |
| Explicit Consent |  |  |  |  |
| Nevera | 1.25(1.50) | .00/3.00 | -1.14 | 3.64 |
| Rarelyb | .50(1.00) | .00/2.00 | -1.09 | 2.09 |
| Occasionallyc | .30(.95) | .00/3.00 | -.38 | .98 |
| Frequentlyd | .59(1.52) | .00/7.00 | .05 | 1.14 |
| Constantlye | .00(.00) | .00/.00 | .00 | .00 |
| Totalf | .53(1.32) | .00/7.00 | .17 | .88 |
| Behaviour Autonomy |  |  |  |  |
| Nevera | .25(.50) | .00/1.00 | -.55 | 1.05 |
| Rarelyb | 2.00(2.83) | .00/6.00 | -2.50 | 6.50 |
| Occasionallyc | 1.70(2.75) | .00/8.00 | -2.7 | 3.67 |
| Frequentlyd | 1.56(2.78) | .00/10.00 | .56 | 2.57 |
| Constantlye | 2.00(2.35) | .00/5.00 | -.91 | 4.91 |
| Totalf | 1.56(2.59) | .00/10.00 | .86 | 2.27 |
| Facebook Culpability |  |  |  |  |
| Nevera | 2.50(1.91) | 1.00/5.00 | -.55 | 5.55 |
| Rarelyb | 2.25(2.63) | .00/5.00 | -1.93 | 6.43 |
| Occasionallyc | 2.40(3.47) | .00/10.00 | -.08 | 4.88 |
| Frequentlyd | 1.66(2.13) | .00/7.00 | .89 | 2.43 |
| Constantlye | 1.80(3.49) | .00/8.00 | -2.54 | 6.14 |
| Totalf | 1.91(2.50) | .00/10.00 | 1.23 | 2.58 |
| Commodification |  |  |  |  |
| Nevera | 3.00(2.16) | .00/5.00 | -.44 | 6.44 |
| Rarelyb | 2.50(3.00) | .00/6.00 | -2.27 | 7.27 |
| Occasionallyc | 2.10(3.11) | .00/10.00 | -.12 | 4.32 |
| Frequentlyd | 3.94(3.56) | .00/13.00 | 2.66 | 5.22 |
| Constantlye | 3.40(2.19) | .00/6.00 | .68 | 6.12 |
| Totalf | 3.38(2.25) | .00/13.00 | 2.50 | 4.26 |
| Visage Autonomy |  |  |  |  |
| Nevera | .75(1.50) | .00/3.00 | -1.64 | 3.14 |
| Rarelyb | .75(1.50) | .00/3.00 | -1.64 | 3.14 |
| Occasionallyc | 1.40(2.07) | .00/5.00 | -.08 | 2.88 |
| Frequentlyd | 1.13(2.08) | .00/8.00 | .38 | 1.87 |
| Constantlye | .20(.45) | .00/1.00 | -.36 | .76 |
| Totalf | 1.04(1.89) | .00/8.00 | .53 | 1.55 |

a*n* = 4 for never. b*n* = 4 for rarely. c*n* = 10 for occasionally. d*n* = 32 for frequently. e*n* = 5 for constantly. f*n* = 55 for total.

Table 8.1

*20-item Commodi-5*

|  |
| --- |
| Explicit Consent |
| Personal information stored on Facebook servers should not be sold without first obtaining the user’s consent |
| Personal information stored on Facebook servers should not be transferred to other organisations without first obtaining the user’s consent |
| Personal information stored on Facebook servers should not be traded without first obtaining the user’s consent |
| Personal information stored on Facebook servers should not be used for profit without first obtaining the user’s consent |
| Behaviour Autonomy |
| All Facebook users’ personal information on Facebook, such as ‘likes’ and comments, should only be visible to people they want to view them |
| All Facebook users’ personal information on Facebook, such as ‘likes’ and comments, should only be attainable by people they want to have them |
| My personal information on Facebook, such as ‘likes’ and comments, should only be visible to people I want to view them |
| My personal information on Facebook, such as ‘likes’ and comments, should only be attainable by people I want to have them |
| Facebook Culpability |
| If my personal information is accessed without Facebook’s authorisation from Facebook’s servers, Facebook should be mainly accountable |
| If my personal information is obtained without my consent from Facebook servers, Facebook should be primarily to blame |
| It should be mainly Facebook’s fault if my personal information is obtained without their knowledge from Facebook servers |
| Facebook should be liable for penalties if my personal information is obtained without my consent from Facebook servers |
| Commodification\* |
| I should be mainly responsible if people access my personal information from Facebook servers without my consent |
| All Facebook users’ interactions on Facebook, such as ‘shares’ and ‘follows’, should be usable by the general public to identify anyone |
| All personal information on Facebook should be easily attainable by the general public |
| All personal information on Facebook should be easily observable by the general public |
| Visage Autonomy |
| All Facebook users’ personal information on Facebook, such as photos and videos, should only be visible to people they want to view them |
| All Facebook users’ personal information on Facebook, such as photos and videos, should only be attainable by people they want to have them |
| My personal information on Facebook servers, such as photos and videos, should not be usable by the general public to track my geographic whereabouts |
| My personal information on Facebook servers, such as photos and videos, should not be usable by the general public to monitor my geographic whereabouts |

*Note*. \* Indicates all Commodification items are reverse-scored.

Appendix A

Participation Facebook Post

Dear reader,

You are invited to participate in the research project ‘Surveying the Australian General Public’s Attitudes towards Personal Data on Facebook’. This research project is being conducted primarily by Jack Sevil, a student undertaking this research in partial fulfilment of the Master of Justice and Criminology degree at the Royal Melbourne Institute of Technology (RMIT) University. This research project aims to assess participants’ attitudes towards the privacy and security of personal information of Facebook servers, as well as towards metadata as an e-commerce commodity and Facebook surveillance. If you are seeing this post it is because it has been posted on Facebook by Jack Sevil. Participation is completely voluntarily and anonymous. If you are interested in learning more about participating, please click the link below.

Link:

Appendix B

Participant Information Form

Description: RMIT University

**Participant Information Sheet/Consent Form**

**Project Title:** Surveying the Australian General Publics’ Attitudes towards Personal Data on Facebook

**Chief Investigator/Senior Supervisor:** Dr Binoy Kampmark

**Principal Research Student:** Jack Sevil [XXXXXXX]

**What does my participant involve?**

Dear potential Participant,

You are invited to participant in the above research project conducted primarily by Jack Sevil. Jack Sevil is a student completing this research in partial completion of the Master of Justice and Criminology at the Royal Melbourne Institute of Technology (RMIT) University. The aim of this study is to understand your attitudes towards personal data privacy and security on Facebook, as well as towards Facebook surveillance and metadata e-commerce. This research is based on criminological and psychological literature which suggests that people are generally untrusting of Facebook personal data privacy and security. Also, this research is important as there is little literature which discusses the general public’s attitudes towards metadata as an e-commerce commodity. If you choose to participate, your participation will involve completing a short 30 question survey, and will take approximately 15 minutes.

**1 Introduction**

You are invited to take part in this research project, which is called ‘Surveying the Australian General Public’s Attitudes towards Personal Data on Facebook’. You have been invited to participate if you are an Australian resident and have found the link to participate on the Facebook webpage ‘Surveying Australian Attitudes towards Personal Data on FB’.

This Participant Information Sheet/Consent Form tells you about the research project. It explains the processes involved in taking part in this research project. Knowing what is involved will help you decide if you want to take part in the research. Please read this information carefully and feel free to e-mail questions about anything that you do not understand or want to know more about. You can e-mail questions before or after participation in the study.

Participation in this research project is voluntary. If you do not wish to take part, you do not have to.

If you decide that you want to take part in this research project, you will be asked to click the ‘Yes, I agree to participate’ option. By signing it, you are telling us that you:

1. Understand what you have read; and
2. Consent to take part in this research project.

**2 What is the purpose of this research?**

This research aims to investigate a sample of the Australian general public’s attitudes towards personal data security and privacy on Facebook, as metadata as an e-commerce commodity, and Facebook surveillance. This research will fill gaps of academic knowledge about the general publics’ attitudes towards personal data security on Facebook, as well as metadata as an e-commerce commodity. This is because there is seemingly sparse exploration of these attitudes within the literature. Also, it is important to gauge all Australian’s attitudes towards personal data on Facebook, because even if you are not a user, your personal data may be uploaded to Facebook. As such, this survey aims to obtain results which contribute to previous findings and understandings.

The exploration of the Australian general publics’ attitudes towards personal data privacy and security on Facebook, as well as towards metadata as an e-commerce commodity is crucial. This is because personal data on Facebook, as well as data generally, are being commercialised. That is, the personal data of Facebook users are being obtained without explicit consent and then sold, traded, and transferred as e-commerce commodities. Personal data, or ‘personal information’, is largely defined in the *Privacy Act 1988* as either recorded or unrecorded information which is factual or fictitious, and can be used to identify an individual. Additionally, under s. 187LA of the *Telecommunications (Interception and Access) Act 1979* (Cth), personal information includes any information related to an individual or an individual’s communication.

**3 What does participation involve?**

If you choose to participate, you will be asked to complete an attitudes survey designed specifically for this research project. The survey has 30 questions in total. The first five questions will ask your country of residence, Facebook account status, age, sex, and Facebook usage. The next 25 questions will provide you with statements and ask you how much you agree or disagree with each statement, ranging from 1 (strongly disagree) to five (strongly agree). The total time estimated for completing the survey is approximately 15 minutes. Your responses will be recorded, and all information provided by you will remain confidential. Before participating you will be asked to provide consent to record your responses. There are no costs associated with participating in this research project, nor will you be paid.

**4 Do I have to take part in this research project?**

Participation in this study is completely optional. If you do not wish to take part, you do not have to. If you decide to take part and later change your mind, you are free to withdraw from the project at any stage before you submit your answers. After this point, the researcher will not be able to determine which responses are yours, and as such they will not be able to remove them. Also, you may obtain a copy of this document to keep by emailing a request to s3491668@student.rmit.edu.au.

Submitting your completed questionnaire is an indication of your consent to participate in the study. You can withdraw your responses any time before you have submitted the questionnaire. Once the questionnaire has been submitted, your responses cannot be withdrawn because they are non-identifiable and we will not be able to tell which one is yours.

**5 What are the possible benefits of taking part?**

While there are no direct benefits to you from this research, your participation will be directly contributing to the academic literary knowledge of attitudes towards personal data privacy and security on Facebook.

**6 What are the risks and advantages of taking part?**

There are no foreseeable risks by taking part in this study. If at any time during or after the study you have questions or concerns, however, you will be able to contact the principal research student, Jack Sevil via email at XXXXXXXXXXXXXXXXXXXXXXXXXXXX. This project will use an external website to create, collect, and analyse the data collected in a survey format. The website being used is ‘Qualtrics’. If you agree to participate in this survey, the responses you provide will be stored on their host server. No personal information will be collected in the survey, and as such none will be stored as data.

**7 What if I withdraw from this research project?**

If you consent to participate, you may withdraw at any time before submitting your survey. If you decide to withdraw during completion of the survey, do not submit your answers. Once you have submitted your answers, you cannot withdraw because they are non-identifiable and we cannot tell which submission is yours.

**8 What happens when the research project ends?**

You will not be able to be provided with your specific results as responses are non-identifiable; however, you may email the researcher for a pdf copy of the thesis once is has been submitted towards the end of 2019. Email XXXXXXXXXXXXXXXXXXXXXXXXXXXX and request a pdf copy of the completed thesis.

**How is the research project being conducted?**

**9 What will happen to information about me?**

No identifying data will be gathered in this research. This means that participation is anonymous and your identifying information is not recorded. The survey response data will be kept with the researcher on the Qualtrics server and a computer hard drive. The primary researcher, Jack Sevil, and their research supervisor will have access to this data. The data will be stored for 12 months past the submission date of the final report. Following this, the data will be deleted from both the Qualtrics server and the computer hard drive in accordance with RMIT policies. As such, your consent will allow the researcher to use this data solely in this research project, and no others.

By signing the consent form, you consent to the research team collecting and using information from you for the research project. Any information inadvertently obtained in connection to the research project that can identify you will remain confidential. It is anticipated the results of this project will be published and/or presented in a variety of forums. In any publication and/or presentation, information will be provided in such a way that you cannot be identified, except with your express permission. Confidentiality will be maintained because the information will contain no information which can be used to identify you. Any information that you provide can be disclosed only if (1) it is protect you or others from harm, (2) if specifically allowed by law, (3) you provide the researchers with written permission. Any information obtained for the purpose of this research project and for the future research described that can identify you will be treated as confidential and securely stored.

**10 Who is organising and funding the research?**

The research project is being conducted by Jack Sevil as a part of their Master of Justice and Criminology thesis projects. This research is funded solely by the principal research student, Jack Sevil.

**11 Who has reviewed the research project?**

All research in Australia involving humans is reviewed by an independent group of people called a Human Research Ethics Committee (HREC). This research project has been approved by the RMIT University HREC. This project will be carried out according to the *National Statement on Ethical Conduct in Human Research* (2007). This statement has been developed to protect the interests of people who agree to participate in human research studies.

**12 Further information and who to contact**

If you want any further information concerning this project, you can contact the researcher on +XXXXXXXXXXXXX.

**Research Contact Persons**

|  |  |
| --- | --- |
| **Name** | Dr Binoy Kampmark |
| **Position** | Senior Supervisor |
| **Telephone** | XXXXXXXXXX |
| **Email** | XXXXXXXXXXXXXX@XXXXXXXXXXX |

|  |  |
| --- | --- |
| **Name** | Jack Sevil |
| **Position** | Principle Research Student |
| **Telephone** | XXXXXXXXXXXXXX |
| **Email** | XXXXXXXX@XXXXXXXXXXXXXXXXXXX |

**13 Complaints**

Should you have any concerns or questions about this research project, which you do not wish to discuss with the researchers listed in this document, then you may contact:

|  |  |
| --- | --- |
| Reviewing HREC name | RMIT University |
| HREC Secretary | Peter Burke |
| Telephone | 03 9925 2251 |
| Email | [human.ethics@rmit.edu.au](mailto:human.ethics@rmit.edu.au) |
| Mailing address | Research Ethics Co-ordinator  Research Integrity Governance and Systems  RMIT University  GPO Box 2476  MELBOURNE VIC 3001 |

Appendix C

30-item Questionnaire

Country of Residence

Australia

Other

Facebook Account

Yes, I have a Facebook account

No, I do not have a Facebook account

Yes, I have a Facebook account, but it is deactivated

Age

(Ages 18 to 100 provided within an electronic drop-down box in Qualtrics)

Sex

Female

Male

Other

Facebook Use

Never

Rarely

Occasionally

Frequently

Constantly

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1. All Facebook users’ personal information on Facebook, such as photos and videos, should only be visible to people they want to view them. | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
| 2. All Facebook users’ personal information on Facebook, such as photos and videos, should only be attainable by people they want to have them. | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
| 3. Personal information stored on Facebook servers should not be sold without first obtaining the user’s consent. | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
| 4. The times of all Facebook users’ interactions on Facebook, such as ‘likes’ and comments, should not be usable by the general public to track anyone’s geographic whereabouts. | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
| 5. I should be mainly responsible if people access my personal information from Facebook servers without my consent. | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
| 6. My personal information on Facebook, such as photos and videos, should only be visible to people I want to view them. | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
| 7. My personal information on Facebook, such as photos and videos, should only be attainable by people I want to have them. | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
| 8. Personal information stored on Facebook servers should not be transferred to other organisations without first obtaining the user’s consent. | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
| 9. All Facebook users’ interactions on Facebook, such as ‘shares’ and ‘follows’, should be usable by the general public to identify anyone. | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
| 10. If my personal information is accessed without Facebook’s authorisation from Facebook’s servers, Facebook should be mainly accountable. | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
| 11. All Facebook users’ personal information on Facebook, such as ‘likes’ and comments, should only be visible to people they want to view them. | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
| 12. All Facebook users’ personal information on Facebook, such as ‘likes’ and comments, should only be attainable by people they want to have them. | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
| 13. The trade of personal information stored on Facebook servers should be allowable without first obtaining the user’s consent. | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
| 14. All the information people upload to Facebook, such as photos and videos, should not be usable by the general public to track anyone’s geographic whereabouts. | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
| 15. It should be mainly Facebook’s fault if my personal information is obtained without their knowledge from Facebook servers. |  |  |  |  |  |
| 16. My personal information on Facebook, such as ‘likes’ and comments, should only be visible to people I want to view them. | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
| 17. All personal information on Facebook should be easily attainable by the general public. | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
| 18. Personal information stored on Facebook servers should not be traded without first obtaining the user’s consent. | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
| 19. The dates of all Facebook users’ interactions on Facebook, such as ‘likes’ and comments, should not be usable by the general public to identify others. | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
| 20. It should be mainly Facebook’s fault if my personal information is obtained without their knowledge from Facebook servers. | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
| 21. All personal information on Facebook should be easily observable by the general public. | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
| 22. My personal information on Facebook, such as ‘likes’ and comments, should only be attainable by people I want to have them. | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
| 23. Personal information stored on Facebook servers should not be used for profit without first obtaining the user’s consent. | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
| 24. The information anyone uploads to Facebook, such as photos and videos, should not be usable by the general public to identify others. | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
| 25. Facebook should be liable for penalties if my personal information is obtained without my consent from Facebook servers. | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |

Appendix D

Item Composition of 25-item Questionnaire and Scoring Key

Facebook Personal Data Security

1. All Facebook users’ personal information on Facebook, such as photos and videos, should only be attainable by people they want to have them.
2. My personal information on Facebook, such as photos and videos, should only be attainable by people I want to have them.
3. All Facebook users’ personal information on Facebook, such as ‘likes’ and comments, should only be attainable by people they want to have them.
4. All personal information on Facebook should be easily attainable by the general public [RS].
5. My personal information on Facebook, such as ‘likes’ and comments, should only be attainable by people I want to have them.

Facebook Personal Data Privacy

1. All Facebook users’ personal information on Facebook, such as photos and videos, should only be visible to people they want to view them.
2. My personal information on Facebook, such as photos and videos, should only be visible to people I want to view them.
3. All Facebook users’ personal information on Facebook, such as ‘likes’ and comments, should only be visible to people they want to view them.
4. My personal information on Facebook, such as ‘likes’ and comments, should only be visible to people I want to view them.
5. All personal information on Facebook should be easily observable by the general public [RS].

Facebook Personal Data Commerce

1. Personal information stored on Facebook servers should not be sold without first obtaining the user’s consent.
2. Personal information stored on Facebook servers should not be transferred to other organisations without first obtaining the user’s consent.
3. The trade of personal information stored on Facebook servers should be allowable without first obtaining the user’s consent [RS].
4. Personal information stored on Facebook servers should not be traded without first obtaining the user’s consent.
5. Personal information stored on Facebook servers should not be used for profit without first obtaining the user’s consent.

Facebook Metadata

1. The times of all Facebook users’ interactions on Facebook, such as ‘likes’ and comments, should not be usable by the general public to track anyone’s geographic whereabouts.
2. All Facebook users’ interactions on Facebook, such as ‘shares’ and ‘follows’, should be usable by the general public to identify anyone [RS].
3. All the information people upload to Facebook, such as photos and videos, should not be usable by the general public to track anyone’s geographic whereabouts.
4. The dates of all Facebook users’ interactions on Facebook, such as ‘likes’ and comments, should not be usable by the general public to identify others.
5. The information anyone uploads to Facebook, such as photos and videos, should not be usable by the general public to identify others.

Facebook Accountability

1. I should be mainly responsible if people access my personal information from Facebook servers without my consent [RS].
2. If my personal information is accessed without Facebook’s authorisation from Facebook’s servers, Facebook should be mainly accountable.
3. If my personal information is obtained without my consent from Facebook servers, Facebook should be primarily to blame.
4. It should be mainly Facebook’s fault if my personal information is obtained without their knowledge from Facebook servers.
5. Facebook should be liable for penalties if my personal information is obtained without my consent from Facebook servers.

Scoring Key

|  |  |
| --- | --- |
| Privacy | 1, 6, 11, 16, 21RS |
| Security | 2, 7, 12, 17RS, 22 |
| Facebook Personal Data Commerce | 3, 8, 13RS, 18, 23 |
| Facebook Metadata | 4, 9RS, 14, 19, 24 |
| Facebook Accountability | 5RS, 10, 15, 20, 25 |