CONTRIBUTIONS OF SOCIAL MEDIA TO PARATRANSIT/MINIBUS TAXI CHALLENGES IN SOUTH AFRICA

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ABSTRACT

To-date, Information Technology (IT) is at the centre of most efficient and effective public transport (PT) services. Moreover, the shift towards digitalisation is generally growing and, therefore, changes in PT user needs. Although (basic) customised IT integration into the transit system is costly, social media (SM) are relatively affordable alternatives. SM research field is emerging; nevertheless, studies are increasingly emphasizing that positive interactions between the service providers and user lead to user satisfaction and growth in client-base. For public services, SM stimulates public-private relations and promote accountability and transparency. In that regard, this study focused on SM to highlight the contributions of public SM contents paratransit or minibus taxi (MBT) challenges in South Africa. Descriptively, SM data between Jan 2019 – Mar 2020 and Oct 2021 – Jun 2022 (n: 114, topics: 28, comments: 1683, and reactions: 3063) relating to the case study of Waterberg District Municipality, is analysed. Findings show that, whilst the public or MBT users are actively participating on social media, the drivers/operations are not engaging, at least, on topics of service quality. Future studies need to fully assess the driver/operator perceptions of SM usage, their passive engagements, and/or SM integration in the MBT industry. Policy frameworks need to shift towards accommodating SM contents and supporting IT investments, in general, as a measure to improve PT user satisfaction.

1. INTRODUCTION

This paper made a trajectory from the psychological factors of social media (SM), i.e. the websites and online tools (e.g. Facebook, Twitter) that enable the interactions and exchanges of data between their users. Furthermore, a reference was made to the Information System (IS) Success model by Gillich (2020), which outlines that there is an interdependency relation between the influencing factors and acceptance of an IS (the components include the quality of information, service and system). With respect to IS components, this model states a (public transport) service is fully supported (i.e., achieving desired level of user satisfaction) if the both the user actions and attitudes are positive (which will feed back into usage), alternatively, there is either 'resistance (i.e., positive action and negative attitude), 'endorsement' (i.e. passive action and negative attitude), or 'rejection' (i.e. passive action and negative attitude). Other scholars (e.g. de Oña et al., 2013; Rahman et al., 2016) also note that the quality of public transport (PT) services is of maximum importance in modern society. In addition, literature states that the travellers make trade-offs based on the characteristics of the transit modes and their decisions (or part of their trade-offs) are constituted by their actual circumstances (e.g. household size, income sources, travel mates, built environment), and often, the psychological factors (i.e.

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perceptions, preferences and attitudes) have greater influence on their trip decisions (Cullinane, 2002; Frei et al., 2017; Rahman et al., 2016; Rojaz Lopez & Wong, 2019).

Information Technology (IT) integration in general improves the efficiency and effectiveness of a service. For instance, the 1924 Jitney service concept has been widely revolutionised recently, particularly by the Telecommunication Network Companies (TNCs) to provide the sharing economy or on-demand mobility services, e.g. Uber, Bolts, DiDi, Dial-a-Ride (Adebayo, 2019; Eckhardt et al., 2018; Papanikolaou et al., 2017; Šoštaric et al., 2022). However, the above-mentioned services are lacking in or limited to certain communities, particularly in the context of lower-income countries such as South Africa (SA). Furthermore, the (basic) customised IT integration (i.e. TNCs like-product) is very expensive. It is noteworthy to state that this is commonly regarded as a digital or 'social web' era (Dwivedi et al., 2021; Santos et al., 2022), since the penetration of the Web 2.0 in the early 2000s (Leong et al., 2019; Serumula & Vanderschuren, 2024; Tavakoli & Mura, 2018). The international society is actively and increasingly using the SM on a wide spectrum of topics, ranging from social and economy through culture and politics to environment and mobility (Leong et al., 2019; Kemp, 2020; Swar & Hameed, 2017). Studies are increasingly emphasizing that active SM engagements between service providers and users lead to user satisfaction and attract more users (Ding, 2022; Discovery, 2019; Impact Marketing Group, 2021; Lestari et al., 2023; Rishika et al., 2013; Yang & Li, 2013). The latter expands to public services (Bertot et al., 2012; Chatfield & Reddick, 2018; Masizana & Salubi, 2022; Picazo-Vela et al., 2016; Setiawan, 2021). Notably, there are three distinct perspectives about SM on public services. Firstly (initial perspective), SM is not intended for public services (for instance, Mergel, 2013; Zavattaro & Sementelli, 2014). Secondly (over the years), SM can improve public service in some way (examples include Boson et al., 2015; Jukic & Merlak, 2017). Thirdly (recent and most growing), SM can effectively and accordingly improve public services (for example, Rodriquez-Boliviar & Alcaide, 2018; Setiawan, 2021).

The momentum of the third perspective can be related to various factors. From PT lenses, SM are relatively affordable alternatives to TNCs like-products (Serumula & Vanderschuren, 2024). A few examples include the tech-savvy travellers, who hitchhike over SM in rural SA (Serumula & Vanderschuren, 2023, 2024), the prevalence of hitchhiking in Eastern Cape Province, SA that inspired Miteche (2013) to develop an ad-hoc ride-hailing or online hitchhiking IT application, and the (Western) World has several hitchhiking related organised or online accounts, e.g. BlaBlaCar, Couchsurfing, Rezo Pouce, SM groups and pages (Eckhardt et al., 2018; Laviolette, 2020; Quora, 2024; Serumula & Vanderschuren, 2023). Notably, SM research is an emerging field (Kapoor et al., 2018; Snelson, 2016; Townsend & Wallace, 2018). Some of the existing studies cover the SM impacts on psychological well-being (Ahmad & Murad, 2020; Jiao et al., 2017; Chatterjee, 2020; Ostic et al., 2021), content generation and consumption (Kircaburum et al., 2020; Kamboj et al., 2018; Shareef et al., 2017), addressing the information management (Kuo & Feng, 2013; Lwin et al., 2024), mobile phone usage (Leong et al., 2019; Swar & Hameed, 2017), user-service relation quality (Casalo et al., 2010), brand/service loyalty and trust (Habibi et al., 2014; Liu et al., 2018), and (public) mobility development (Chonka, 2023; Manca et al., 2017; Serumula & Vanderschuren, 2023). Oftentimes, the engagements on SM are explained by both Social Identification, and Use and Gratification theories (Santos et al., 2022), which explain the user needs and fulfilments of these needs. These needs include cognitive (e.g. facts, information, knowledge), affective (e.g. mood, pleasure), personal integrative (e.g. gain credibility, stability, status), social integrative (e.g. sense of common interest, family, friendship), and tension free (e.g. relieve stress, tension). The enhanced classic William James' theory

(1890 - 'the principle of psychology') by Lacasse (2017) indicates the connection between the human bodily changes, cognitive process, and associated emotions. Whereby, one gets an emotional feeling upon bodily change sensation due to new, risky or uncertain stimuli (e.g. high travel fare, long waiting time, bad attitude driver), and this feeling gives rise to the decision-making process. The "emotions and their expressions serve useful and adaptive functions" and "anticipating an emotion can trigger a reaction, due to associations learned from the past experiences" (Lacasse, 2017:1).

1.1   Aim of Paper

The aim of the paper was to highlight the contributions of public SM contents to the paratransit or Minibus Taxi (MBT) challenges in South Africa. The objectives were to (a) highlight the SM power exertions (which is posting and commenting) of, and (b) evaluate the SM interactions between MBT drivers and the users/public.

1.2   Problem Statement

PT services are widely failing to reach the desired level of user satisfaction. For instance, these services are not cheap, time efficient and reliable (Cullinane, 2002; dell'Olio et al., 2011; STATSSA, 2021a; Waterberg District Integrated Transport Plan, 2021), they are insufficiently addressing the demand (Ali, 2010; Rahman et al., 2016), and their quality is only 'judged' by the users (Berry et al., 1990) meanwhile the driver attitudes are not kind (Rahman et al., 2016). Similar to many lower-income countries, the dominant mainstream public modes in SA are paratransit – locally known as MBT services (Bahre, 2014; Joewono & Kubota, 2005; STATSSA, 2021a). MBT are generally ill-equipped, non-standardized and deploying the traditional operations of driving around in search for the users and utilization of routes based on the knowledge of the drivers, which could lead to long waiting/travel times and financial unsustainable trips (Phun & Yai, 2016; Rahman et al., 2016).

Locally, MBT are constantly in conflicts and intense rivalry with the IT integrated mobility services on the ground of unfair competition (Adebayo, 2019; Chirume, 2017; Feni, 2015; Gill, 2018; Kamga et al., 2022; Litan & Rivlin, 2001; National Taxi Lekgotla, 2020; Nchofoung & Asongu, 2022; Platinum Weekly Newspaper, 2020; SA Government, 2009). Despite the government regulations, scholars note that the digital divide is another key component of the unfair competition (Etoundi et al., 2016; Oloyede et al., 2023). Because an IT integrated mode (e.g. Uber, Bolt) is enabled to match the user and driver and optimize the travel route (Papanikolaou et al., 2017; Šoštaric et al., 2022). In essence, studies show that internet enable communication as well as the efficient and effective flow of information across various spatial areas, which could otherwise be difficult and/or financially expensive to achieve (Afonasova et al., 2019; Altman et al., 2015; Bauer et al., 2002; Hampton & Wellman, 2003; Kamga et al., 2022; Katz & Aspden, 1997; Litan & Rivlin, 2001; Nchofoung & Asongu, 2022; Reheingold, 1993; Xu et al., 2019).

According to GSMA (2023), and Tavakoli and Mura (2018), the usages of internet still comprise the Web 1.0 applications/application (i.e. read-only form); however, as stated earlier, this era is widely Web 2.0 (i.e. 'social web' or bi-directional interactions) and the increasing applications/contents and interests in the Web 3.0 (i.e. advanced Web 2.0 with multi-user virtual and intelligent search), Web 4.0 (i.e. machine and human interactions), and Web 5.0 (i.e. 'sensory and emotional web' with complex interactions between machines and human). Generally, the (basic) customized IT integration into the transit system is costly (Papanikolaou et al., 2017; Šoštaric et al., 2022); however, the SM are

relatively affordable alternatives (Chonka, 2023; Serumula & Vanderschuren, 2023, 2024). SM contributes positively to a service upon active engagements between the provider and users (Discovery, 2019; Impact Marketing Group, 2021; Lestari et al., 2023; Setiawan, 2021; Yang & Li, 2013), and the opposite is true. The two key aspects to the success of IT systems or rather SM usage, are internet connectivity and device or mobile phone access.

1.3   Internet Connectivity

Studies (such as Lee et al., 2016; Kamga et al., 2022; Wike et al., 2022) note that the internet connectivity and access are phenomenal stimuli for IT innovations and general entrepreneurship. According to GSMA (2023), in 2020, the Sub-Saharan Africa region is noted as the lowest worldwide in terms of the mobile internet penetration (i.e. 23,0% connection, 60,0% usage gap, and 17,0%) and the global mobile internet penetration is even higher than that of the region (i.e. 55,0% connected, 41,0% usage gap, and 4,0% coverage gap). Furthermore, GSMA (2023) equates the lower levels of mobile internet penetration to lack of digital skills and affordability. In South Africa, according to STATSSA (2021b), the main source of internet access is mobile phone (69,4%) and other sources include workplace (17,6%), internet café or educational facility (13,6%), and home connection (10,4%). Moreover, many households (77,5%) across the country have at least one member who has access to the internet via one or more of the above-mentioned sources. For rural South African communities, internet access is through mobile phone (59,2%), workplace (4,6%), internet café/educational facility (3,5%), and home connectivity (1,2%) (STATSSA, 2021b). Furthermore, South Africa is one of the few countries worldwide with an institutional setup for advanced ICT, i.e. 5G or Web 5.0 service enabler (GSMA, 2023).

1.4   Mobile Phone Access

Hausman (1999) revealed that there has been a rapid increase in the phone market, since the inception at the rate between 25,0% and 35,0% annually between 1983 and 1997. Demandsage (2023) highlights that approximately 85,0% of the global population has access to mobile devices. Literature indicates that the attributes of the mobile phone (i.e. battery capacity, brand, camera/video, device weight, game consoles, geographic position system, processing capacity, screen size, and storage capacity) drive the purchase or consumption of these technological devices – i.e. the consumer utility (Ahmad & Anders, 2012; Ahmed et al., 2019; Dewenter et al., 2007; Khasawneh & Hasouneh, 2010; Lancaster, 1966; Nazari et al., 2011; Rahim et al., 2016; Winger & Wall, 2006). Ahmed et al. (2019) emphasize that the lower-income countries (including the remote communities) are suffering from poor infrastructures (e.g. road, health facilities) but improved access to mobile phones.

Acheampong et al. (2020) revealed that there is high mobile penetration in Ghana, thus, deduce that implementation sharing economy service. In 2011 (September), Africa held the second position of the largest mobile market (i.e. 620 million mobile connections) worldwide after Asia (GSMA, 2011; Miteche, 2013). In Sub-Saharan Africa, mobile phone penetration has increased from 32,1% in 2008 to 75,4% in 2016 (GSMA, 2011; Miteche, 2013). The number of people without mobile phones are generally low, e.g. in India (35,0%), Nigeria (17,0%), Indonesia (29,0%) (BankMyCell, 2023; Wike et al., 2022). In South Africa, the mobile phone ownerships have rapidly increased with over 50,0% between 2001 and 2011 - i.e. from 31,9% in 2001 to 88 9% in 2011 (STATSSA, 2012), and in 2020, over 90,0% of the households across all the nine provinces have access to mobile phones (STATSSA, 2021b). The rate of mobile penetration in rural South Africa was approximately 38,0% in 2012 (Miteche, 2013; Rao, 2012).

Despite the lack of affordability, another challenge related to mobile phone access is due to the regular improvements of performance and technical capabilities, which influence the mobile phone consumers to change their devices regularly (Ahmed et al., 2019; Hew et al., 2017). Based on the findings related to Botswana and Namibia, James (2011) established that the access to mobile phones in lower-income countries is not limited to individual ownership (i.e. the higher-income approach) but extends to the sharing of the devices.

1.5 Scope of Paper

The preceding section covers the material (i.e., methods, data and analyses), followed by the section on the results and discussions. Thereafter, the section on the study conclusions, which also highlights the limitations to this paper, including the recommendations for both the policy-makers and researchers.

2. RESEARCH MATERIALS

2.1 Methods

The research method for this paper is the netnography, i.e. the qualitative online research (Kozinets, 2010), using a case study tool. This approached is applied in research when the aim is to gain deeper understanding of the subject, i.e., measure the extent (Hollebeek, 2012; Vivek et al., 2012), identify the dimensions (Dessart et al., 2015), adapt to the current context (Bowden et al., 2017; Choi & Burnes, 2017; Coelho et al., 2018; Marbach et al., 2016). Where the time and financial costs are limited, the real-world statistical representation is preserved whilst constructing one or more spatial and temporal dimensions, and the research is centralized on humans (Gerring, 2006; Sandelowski, 2010; Yin, 2011).
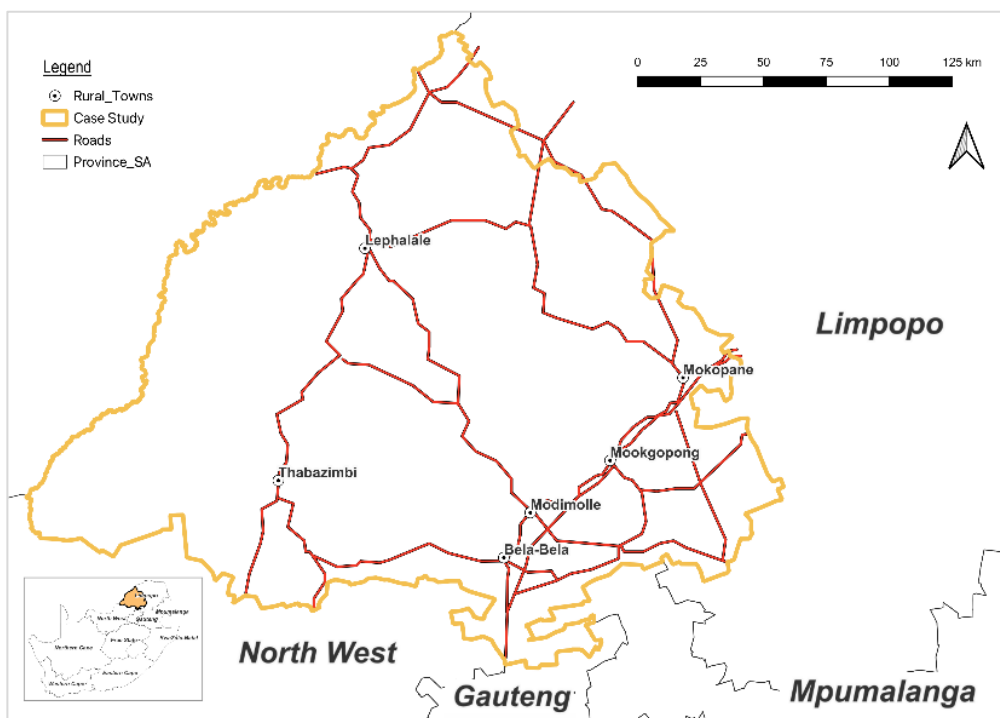

Figure 1: Case Study Area. Source: Created by the authors

A case of Waterberg District Municipality was used, which is in the western side of and it is the largest District Municipality in Limpopo Province, South Africa (see Figure 1). This was chosen because it comprises six rural towns (i.e. Bela-Bela, Lephalale, Modimolle,

Mokopane, Mookgophong and Thabazimbi) with diverse socio-economic, cultural and environmental properties that match those in other communities, particularly in lower-income countries (Waterberg District Integrated Transport Plan, 2014; WDM Profile, 2020). For example, low/agricultural income sources, multiple indigenous languages, mixed land uses, diverse moral values, rural-urban dynamics. In addition, the case study area was chosen because the author is born and bred from this area, he is familiar with the communities (including the languages and cultural beliefs).

2.2 Data and Analysis

The datasets were systematically harvested from Facebook between January 2019 – March 2020 and October 2021 – June 2022, following Serumula and Vanderschuren (2023), who established the importance of SM (particularly Facebook) in the development of public transport in SA. That is, the mining of the publicly available datasets. The keywords included "taxi", "transport", and "combi". The harvested posts were available in public platforms of individuals, groups and pages. As SM research is generally an emerging field (Kapoor et al., 2018; Snelson, 2016; Townsend & Wallace, 2018), this paper applied descriptive statistics to analyse the datasets, using Microsoft Excel (2013).

3. RESULTS AND DISCUSSION

3.1 Results

The results yielded a total of 114 unique Facebook posts, refer to Figure 2. Out of which, over half (50,9%) of the posts are created by females, followed by males (43,0%), and then, pages (6,1%). Gender comparison findings show that although females generated relatively more posts than males, however, both the comments and reactions to their posts (38,6% and 21,0%, respectively) are relatively smaller than those of males (41,1% and 36,3%, respectively). By comparing the ratio of posts to both comments and reactions of the individuals and pages, it became clear that pages relatively receive more comments (1683 – 20,4%) and reactions (3063 – 42,7%).
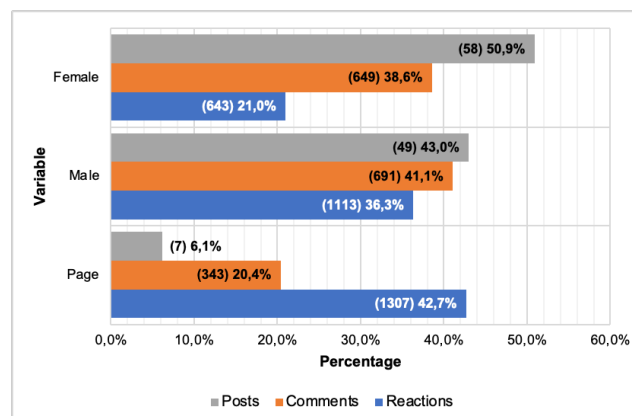
Figure 2: Content Statistics

3.1.1 Post Topics
Table 1 displays the post statistics related to the MBT services. A sum of 28 topics were found when categorizing the total posts. The five most posted topics revolve around querying about the MBT travel fare (21,1%), the location of rank/facility (17,5%), earliest and latest travel time (8,8%), as well as announcements of road accidents (6,1%) and complains about long waiting times in the vehicles (6,1%). The top five topics in terms of comments include: road accidents (17,5%), travel fare query (16,3%), rank/facility query

(10,2%), limited routes (10,0%), and long waiting times inside the MBT (6,8%). Regarding the reactions, the top five topics are road accidents (40,2%), overload (12,0%), long waiting times inside the MBT (6,9%), limited routes (5,2%), and unhygienic passengers (5,1%).

Most topics are covered by males (20), followed by females (19) and then, pages (2). Over half of the female posts query about the location of MBT ranks/facilities (25,9%), travel fare (20,7%) and travel time (13,8%). On the other hand, approximately one third of male posts query about travel fare (24,5%) and the locations of ranks/facilities (10,2%), and other one third is about complains towards unruly drivers (10,2%), overload (6,1%), long waiting time inside (8,2%) and outside (6,1%) of the MBT. Almost all topics on the pages are about road accidents (85,7%) and a few on overload (14,3%). Interestingly, the posts of violence against women are mainly created by males (4,1%) than females (1,7%). In addition, males complain about the MBT services in general, e.g. they solemnly post about the potential xenophobic attacks, burning of vehicles, and no spare wheels. Meanwhile, females compliment the same services (e.g. excellence rating, zero posts on reckless driving, and no posts on unruly and unidentifiable drivers), instead their complaints are mainly route-related and towards fellow passengers.

Table 1: Post Statistics

Topic	Post			Posted By		
	Count	*Comments*	*Reactions*	*Female*	*Male*	*Page*
	114	1683	3063	58	49	7
Travel Fare Query	21,1%	16,3%	2,5%	20,7%	24,5%	0,0%
Rank/Facility Query	17,5%	10,2%	2,6%	25,9%	10,2%	0,0%
Travel Time Query	8,8%	2,4%	0,7%	13,8%	4,1%	0,0%
Road Accidents	6,1%	17,5%	40,2%	0,0%	2,0%	85,7%
Long Waiting Time (IN)	5,3%	6,8%	6,9%	3,4%	8,2%	0,0%
Overload	5,3%	4,3%	12,0%	3,4%	6,1%	14,3%
Long Waiting Time (OUT)	4,4%	3,7%	3,6%	3,4%	6,1%	0,0%
Route Network Query	4,4%	1,7%	0,2%	6,9%	2,0%	0,0%
Unruly Drivers	4,4%	5,1%	2,3%	0,0%	10,2%	0,0%
High Travel Fares	2,6%	1,5%	1,0%	3,4%	2,0%	0,0%
Limited Routes	2,6%	10,0%	5,2%	1,7%	4,1%	0,0%
Violence against Women	2,6%	4,3%	3,3%	1,7%	4,1%	0,0%
Unhygienic Passengers	1,8%	3,4%	5,1%	1,7%	2,0%	0,0%
Unhygienic Drivers	0,9%	0,1%	0,4%	1,7%	0,0%	0,0%
Limited Transports	0,9%	1,2%	0,6%	1,7%	0,0%	0,0%
Modal Integration	0,9%	0,4%	0,6%	0,0%	2,0%	0,0%
Burning Vehicle	0,9%	1,5%	3,8%	0,0%	2,0%	0,0%
Mechanical Problems	0,9%	0,1%	0,8%	1,7%	0,0%	0,0%
No Spare Wheel	0,9%	0,4%	0,0%	0,0%	2,0%	0,0%
Non-utilized Ranks/Facilities	0,9%	0,8%	1,4%	0,0%	2,0%	0,0%
Potential Xenophobic Attack	0,9%	0,5%	0,1%	0,0%	2,0%	0,0%
Reckless Driving	0,9%	0,5%	0,3%	0,0%	2,0%	0,0%
Ride Request Hand-Signs	0,9%	0,1%	0,4%	1,7%	0,0%	0,0%
Route Network Violence	0,9%	2,0%	1,6%	1,7%	0,0%	0,0%
Excellence Rating	0,9%	0,0%	0,1%	1,7%	0,0%	0,0%
User Safety Enforcement	0,9%	2,1%	2,2%	1,7%	0,0%	0,0%
Unidentifiable Drivers	0,9%	0,5%	0,4%	0,0%	2,0%	0,0%
Unruly Passengers	0,9%	2,4%	1,7%	1,7%	0,0%	0,0%

The findings in Table 1 further yielded that all posts are generated by the MBT drivers/operators. Out of the 1683 comments on 28 topics related to MBT services, none of the comments are generally from the MBT drivers or operators. Figure 3 illustrates the statistics of all the posted topics into eight themes. Most topics fall under the information quality (52,6%), followed by service quality (21,9%), road safety (14,0%), system quality (3,5%), equity (2,6%), economic (2,6%), access (1,8%), and then, customer misbehaviour (0,9%).
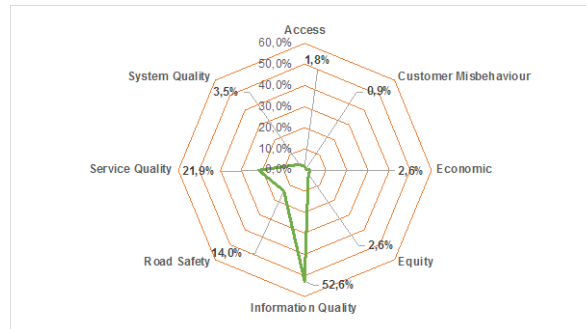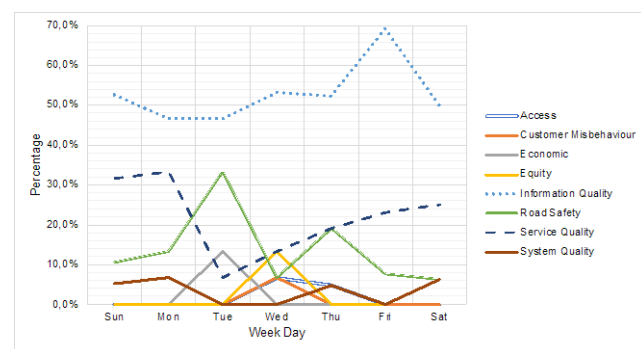

Figure 3: Thematic Statistics

3.1.2 Post Trends

Figure 4(a) shows the weekly post trends. Females post every day of the week, and three peaks are observed, with the highest peak on Thursday (19,0%), followed by Tuesday (15,5%) and then Sunday (13,8%). Similarly, males post every day of the week, however, there are two peaks associated with their posts, i.e. on Saturday (20,4%) and Thursday (16,3%). As for pages, there are no posts on Wednesday, Friday and Saturday, and three equal peaks (28,6%) are observed on Sunday, Tuesday, and Thursday. Overall, MBT related posts are constant (13,2%) from Monday to Wednesday. The first and highest peak is on Thursday (18,4%), a drastic drop is found on Friday (11,4%). The trend picks up again on Saturday (14,0%) until reaching the second peak on Sunday (16,7%).
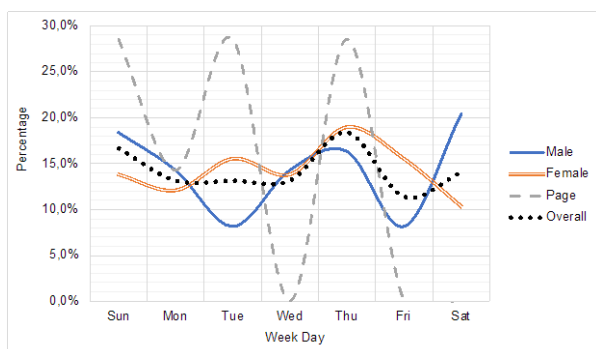
Figure 4: Weekly (a) Post and (b) Thematic Statistics

Figure 4(b) indicates that approximately half of the daily posts are related to information quality. The second prominent theme, except on Tuesday, is the service quality, where from Thursday until Monday, the percentages are above 20,0%. On Tuesday, the second dominant theme is road safety (33,3%). The rest of themes (i.e., access, customer misbehaviour, economic, equity, and system quality) are below 15,0% throughout the week. It is worth highlighting that access and equity related topics are relatively rare, thus, they appear in less than three days of the week. System quality related topics fluctuates below 10,0% throughout the seven days of the week.

The results revealed a sum of 114 unique Facebook posts related to minibus taxi (MBT) services between January 2019 – March 2020 and October 2021 – June 2022. This finding can be linked to studies such as Serumula and Vanderschuren (2023), and Wike et al., 2022), which state a general usage of SM. Out of which, over half (50,9%) of the posts are created by females, followed by males (43,0%), and then, pages (6,1%). However, the post engagements (i.e. comments and reactions) are reversed, i.e. most engaged posts are those created by pages, followed by males and then, females. This finding implies that the social media (SM) users respond to specific topics based on their emotional feelings, as explained by Lacasse (2017), using 'the principle of psychology' theory by William James (1890).

A total of 28 topics were found, namely, burning vehicle, excellence rating, road accidents, high travel fares, limited routes, limited transports, long waiting time (in the vehicle), long waiting time (out of the vehicle), mechanical problems, modal integration, no spare wheel, non-utilized built infrastructures, overload, potential xenophobic attack trigger, rank/facility, reckless driving, ride request hand-signs, route network query, route network violence, travel fare query, travel time query, unhygienic drivers, unhygienic passengers, unidentifiable drivers, unruly drivers, unruly passengers, user safety enforcement, and violence against women. These topics align with the literature (e.g. Bahre, 2014; Cullinane, 2002; dell'Olio et al., 2011; Phun & Yai, 2016; Rahman et al., 2016; STATSSA, 2021a). The top three posted topics are travelling fare query (21,1%), rank/facility query (17,5%), and travel time query (8,8%). Both the travel fare query (16,3%) and rank/facility query (10,2%) also appear in the top three commented posts, and the third and leading topic is road accidents (17,5%). As for the reactions, the top three topics are road accidents (40,2%), overload (12,0%), and limited routes (5,2%). In context, with reference to the IS Success model by Gillich (2020), most users are not satisfied with the quality of information, service and quality. Thus, the MBT uses are mainly characterized by 'resistance (i.e., positive action and negative attitude), 'endorsement' (i.e., passive action and negative attitude), and 'rejection' (i.e. passive action and negative attitude).

When classified further, the results revealed eight themes, which match with those revealed by Serumula and Vanderschuren (2023). These include information quality (52,6%), service quality (21,9%), road safety (14,0%), system quality (3,5%), economic (2,6%), equity (2,6%), access (1,8%), and customer misbehaviour (0,9%). The weekly trend results showed that SM users post seven days a week. Out of which, the information quality, road safety, and service quality themes appear throughout the week. Meanwhile the other themes appear between five and three days (i.e., system quality) less than three days (i.e., access, customer misbehaviour, economic, and equity). Moreover, the information quality posts take almost half of all posts throughout the seven days of the week. As already noted, according to Gillich (2020), the net benefit of the MBT services is widely compromised as well as the intentions of the users.

An evaluation of the posts and their comments revealed that the content related to MBT services is only generated by the public and MBT users. Thus, neither the posts nor the comments were generated from the MBT driver or operator standpoints. Berry et al. (1990) also noted the above findings that public transport users are the only 'judges' of the service. Based on the weekly post trends, it was concluded that at least availability of MBT drivers or operators due to busy weekly schedules (i.e. Monday to Friday – according to Waterberg District Integrated Transport Plan, 2014) is not a limiting factor. In line with literature (such as dell'Olio et al., 2011; Rahman et al., 2016; Rishika et al., 2013;

Setiawan, 2021; Straddling et al., 2007), at least, the participation of MBT drivers/operators can secure existing and attract potential users, thus, guarantee the business to continue.

4.   CONCLUSIONS

Social media (SM) public contents are generating and/or exacerbating the public perceptions of 'unbothered', 'selfish' and 'no desire to improve' about the paratransit or minibus taxis (MBT) services. Recent studies emphasize that active engagements between the service providers and users/public on SM lead to user satisfaction and further attract new users (Ding, 2022; Discovery, 2019; Impact Marketing Group, 2021; Lestari et al., 2023; Yang & Li, 2013). Moreover, for public services, these active engagements promote accountability and transparency, and further stimulate citizen participations as well as collaboration between service providers, public administration and relevant stakeholders (Bertot et al., 2012; Chatfield & Reddick, 2018; Picazo-Vela et al., 2016; Rodriquez-Boliviar & Alcaide, 2018; Setiawan, 2021). The findings showed that the MBT drivers/operators are widely not posting, commenting or interactive on SM, Facebook, pertaining to the quality of their information, services, and (business) systems. These findings were based on SM mined data between January 2019 – March 2020 and October 2021 – June 2022, which yielded 114 unique posts (by females – 50,9%, males – 43,0% and pages – 6,1%) with 1683 comments and 3063 reactions.

MBT user needs are generally unmet (i.e. no positive attitude and action), thus, the majority of the usages are characterized by the 'resistance (i.e. positive action and negative attitude), 'endorsement' (i.e., passive action and negative attitude), and 'rejection' (i.e. passive action and negative attitude). In addition, the busy weekdays' schedule is not the factor limiting the engagement of the MBT drivers/operators on SM content related to their services. Because the findings showed that daily, the public or MBT users are actively posting contents pertaining to the MBT industry, which cover a wide spectrum of themes. Namely, access, customer misbehaviour, economic, equity, information quality, road safety, service quality, and system quality. On average, over 50,0% of the daily MBT related posts are of the theme information quality (e.g. travel time query, travel fare query, location MBT rank/facility query).

Future studies need to assess the driver/operator perceptions of SM usage (generally), their passive engagements on topics related to their business, and/or SM or other IT integration in their business. Policy frameworks need to shift towards accommodating SM contents and supporting IT integration investments, in general, as a way to improve user/social needs.

4.1   Limitation

The key limitation to this paper is embedded in the assumption that none of the relevant SM posts and engagements (i.e., comments and reactions) had been deleted or modified, at least, between their respective postage dates and data mining period (June 2022). This assumption remains unverified because the historical trails of each post could not be acquired, at least, from Facebook.

4.2   Contribution

This paper contributes to the broad emerging field of social media (SM) research and IT integration with mobilities. Moreover, the findings can be transferred to the global

communities, where the paratransit services are common, SM or IT integration in public transport is not present or financially feasible, and both internet and mobile phones are accessible.

5. ACKNOWLEDGEMENTS

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