Prioritising public transport policy goals in Auckland

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Abstract: The creation of a metropolitan-wide Auckland Council (AC) in New Zealand provides an opportunity to reprioritise transport policy goals. This paper uses Q-methodology to explore stakeholders' preferences for public transport development in the city. Three categories of stakeholders ranked 24 opinion statements sampled from recent central and local government planning and policy documents and the manifesto's of the three largest political parties in New Zealand. The by-person factor analysis using PQMethod software, based on factor scores (Z scores), identifies five distinct viewpoints on policy development. There is strong support for an 'integrated' approach to public transport services, and a demand for investment and efficient and effective co-ordination between central and local government. This paper concludes that there is broad agreement over how to reprioritise transport policy goals to make institutional change happen in the aftermath of the creation of Auckland Council.

1. Introduction

Debate concerning public transport in Auckland is topical, controversial and highly polarised (Imran & Pearce 2015). Since 2000, debate has moved beyond pro and anti-public transport standpoints, instead reflecting widely differing opinions on the factors responsible for poor public transport and the prioritisation of public transport solution development. Many studies have found the absence of a high quality public transport system in Auckland to have its origins in the low-density urban form (Newman *et al.* 2001). Countering these studies, Mees (2010) found that geographical challenges can be overcome by reprioritising transport policy goals to reflect the expressed community needs and aspirations. Communities are generally missing from the transport planning debate in Auckland, but understanding community viewpoints is important for the future of public transport in the city. The creation of Auckland Council in 2010 provides an opportunity to generate deep-rooted structural and process change, which can become a catalyst for improving policy goal-setting. This research investigates the potential for institutional change by exploring community and professional aspirations concerning opportunities for public transport policy goal development.

The 'path development' concept is used to develop propositions for future institutional change in the development of public transport policies in Auckland. Path development explores the nature of institutional change achieved when policy goals are reorganised (Hall 1993, Healey 1999, North 2005, Kim 2011). The core hypothesis is that transition to public transport development is not only dependent on ambitious planning documents (such as the Auckland Plan), political decisions (Mayoral support), the restructuring of local organisations (Auckland Council), but also on institutional capacity to redefine the problem and re-prioritise public transport policy goals. Social and political institutionalists have emphasised the catalytic role of communities (marginal, new and organised groups) in pushing for institutional change, because they incur minimal cost in changing the pattern of current policy goals (Clemens 1997, Thelen 2004, Raje 2007). Mizuoka (2012) finds that in Tokyo, layers of social and political struggle at the local level leads to improvement and investment in public transport. Legacy (2012) shows the importance of mapping tacit community knowledge and aspirations in changing policy goals in Vancouver. She argues that community knowledge is fragmented, but understanding and connecting this knowledge with formal and informal structures can facilitate institutional change. Curtis and Low (2012) emphasise the exploration of community travel experiences, and the identification of community group, academic and professional perspectives on policy goals as essential for transformative change. Sandercock (2000) advocates a dialogical approach with local communities, politicians and professionals exploring the future development needs of diverse populations living in contemporary cities. The everyday experiences of communities and professional perspectives on public transport provide windows of opportunity to redefine public transport problems and solutions. Therefore, this paper elucidates the socio-institutional context of opportunities for institutional change by identifying community aspirations and professional perspectives on public transport development in Auckland. Q-methodology (QM) is used to gain in-

depth, nuanced understanding of community aspirations and professional perspectives on the hierarchy of public transport policy goals.

2. Methodology

This paper uses QM to explore stakeholders' preferences for public transport policy goals in Auckland. Auckland, the largest city in New Zealand, is a car-dependent city with over 85% of journey to work trips being made by car in 2013 (Stat NZ, 2013). Since the creation of the region wide Auckland Council and the council controlled organisation (CCO) Auckland Transport, a strong political and planning desire has been evident to shift towards the transit-oriented transport system identified in the Auckland Plan. This reprioritisation makes Auckland a strong candidate for a case study focused on the potential to urban reset public transport priorities.

QM is associated with a set of theoretical and methodological concepts designed to reveal the viewpoints of a group of participants in a holistic and qualitatively detailed manner (Watts & Stenner, 2012), but does not seek to generalise those viewpoints to a wider population. A Q study will always include two specific elements, data collection via Q sort, and inter-correlation and by-person factor analysis. In QM, participants sort a collection of items or statements in accordance with a dimension such as agreement/disagreement. For this research, statements were collected from central government (NZ Government Policy Statement on Land Transport Funding (GPS) 2012 and Connecting New Zealand 2011) and local government (Auckland Plan) policy and planning documents, and the manifestos of the three largest political parties in New Zealand (National, Labour and the Greens) pertaining to Auckland public transport policy goals. In order for the final collection of statements known as the Q set to be of a manageable size, the items within it had to be sampled from the overall concourse of statements identified within the source material, categorised in terms of the research question under eight themes (economic, social, environment, services, funding/investment, consumers, spatial/land use and institutional) related to role of public transport. From the original 241 statements, a multi-stage process was used to reduce the Q set to 24 statements. This was achieved by removing duplicate statements, statements with multiple propositions and qualifications, and statements of 'fact' rather than opinion to provide a representative sample of the remaining statements (Dryzek & Berejikian, 1993). The final Q set can be found in Table 3 in the results section; each statement is faithful to the original wording in the source document.

It is widely recognised that stakeholder participation is essential to improve transport policy-making (Wilson 2001; Bickerstaff et al. 2002). The involvement of a wide range of stakeholders provides new perspectives, contextualises issues, challenges assumptions and co-produces place-based knowledge (Healey 1999; Wilson 2001). In QM large numbers of participants are not required in order to perform a good quality study with Watts and Stenner (2012) recommending the number of participants (P set) be kept below the number of items in the Q set. Each participant becomes a variable, which means that participants should be selected on the basis of being 'theoretically relevant' (Brown, 1980: 192) knowledgeable, and having a viewpoint about the research question. Strategic sampling was therefore used to recruit the participants. An initial stakeholder mapping exercise identified potential participants on the basis of roles/responsibilities, representation/democracy, technical/policy influence, and legitimacy.

In New Zealand, public transport planning is primarily a function of regional (metropolitan) authorities (such as Auckland Council and its controlled organisation Auckland Transport) but national policies and associated funding are the purview of central Government organisations (NZ Transport Agency and Ministry of Transport). Therefore, 40% (8 of 20) of participants have been strategically selected on the basis of their roles in organisations responsible for public transport policy and planning.

This study is part of a wider research project which hypothesises that mapping tacit community knowledge within a participatory methodology could influence formal or primary stakeholders, ultimately leading to improvements in public transport. According to NZ Census 2013, over half of Auckland's population comes from marginal or new (immigrant) communities. Therefore, 35% (7 of 20) of participants are from community and immigrant groups with experience and knowledge of public transport in Auckland. A third category of stakeholders includes people with influence on planning and policy direction and community perceptions. This category includes central and local government politicians, consultants and academics, with 25% (5 of 20) of participants belonging to this category.

Participants were asked to sort the 24 statements, on the basis of their own point of view concerning the key issues and opportunities for public transport development in Auckland in accordance with the Q matrix in Table 1. Each participant sort was recorded and a follow-up interview conducted, making use of a series of semi-structured questions to gain further insight into the positioning of the statements on the Q matrix and the participant's perspective on public transport in Auckland. However, this paper is limited to Q sort analysis and does not include follow-up interview data.

Table 1: The Q sort matrix

	Forced choice frequency distribution						
	Least important						Most important
Ranking value	-3	-2	-1	0	+1	+2	+3
Number of items	2	3	4	6	4	3	2

3. Results

The 20 Q sorts were inter-correlated and subjected to by-person factor analysis using the dedicated statistical software PQMethod 2.35 (Schmolck & Atkinson, 2002). The factors were extracted on the basis of having eigenvalues greater than 1.00, five factors emerging[1] together explaining 76 percent of the study variance. As shown in Table 2, 18 of the 20 Q sorts loaded significantly on one or other of these five factors, one sort was confounded, loading significantly on more than one factor, and one sort did not load significantly on any of the five factors. Factor loadings of ±0.53 were significant at the $p < 0.01$ level.

Table 2: Factor matrix with x indicating a defining sort

Q Sort		Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	h^2 (commonality)
1	CG1	*0.77x*	-0.10	0.44	-0.05	-0.02	0.80
2	CG2	*0.68x*	-0.13	-0.01	0.41	0.29	0.73
3	CG3	*0.66x*	0.19	0.10	0.00	0.31	0.58
4	CI1	0.05	0.18	-0.02	0.10	*0.85x*	0.77
5	CI2	-0.19	0.12	*0.55x*	0.48	0.06	0.59
6	CI3	0.25	-0.14	*0.80x*	0.11	-0.20	0.77
7	AT1	0.33	-0.08	0.44	*0.73x*	-0.02	0.84
8	AT2	*0.23*	0.17	*0.68x*	0.38	0.17	0.72
9	AC1	0.49	-0.11	0.40	0.49	0.11	0.66
10	CGOV1	*0.83x*	0.16	-0.03	0.27	-0.11	0.80
11	CGOV2	0.21	*0.75x*	0.14	0.39	-0.10	0.79
12	CON1	0.22	0.28	*0.67x*	0.07	0.40	0.74
13	CG4	*0.63x*	-0.02	0.44	0.12	0.41	0.77
14	AT3	*0.62x*	0.14	0.35	0.40	0.17	0.71
15	CGOV3	*0.55x*	0.20	0.39	0.48	0.30	0.81
16	ACA1	0.33	0.22	0.05	*0.79x*	0.24	0.84
17	CGOV4	-0.01	*0.92x*	0.00	-0.04	0.18	0.88
18	POLN1	0.04	0.27	0.23	*0.75x*	0.29	0.77
19	POLL1	0.30	-0.04	0.16	0.42	*0.64x*	0.70
20	POLN2	0.22	-0.27	0.06	*0.53*	*0.56*	0.72
Eigenvalues (commonality)		4.2	2.0	3.0	3.6	2.4	
% of variance explained		21	10	15	18	12	

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[1] A range of factor solutions and rotations were examined but this solution using principal component extraction and varimax rotation accounted for the greatest variance.

Note: Significant loadings (p<0.01) are shown in italics. Defining sorts (significant on only one factor) are indicated by *x*, h^2 is the sum of the squares of factor loadings by rows, and eigenvalues are the sum of squares by column.

Defining Q sorts for any of the factors extracted in this study exhibit distinct viewpoints regarding the key issues and opportunities for public transport development in Auckland. Those defining sorts for each factor are merged within PQMethod to form factor arrays (see Table 3 and Figure 1) which are effectively ideal-type Q sorts based on weighted averaging.

Table 3: Factor array

Statements		Factor				
		1	2	3	4	5
1	Public transport can reduce congestion and improve economic efficiency in Auckland	1	2	1	0	2
2	Public transport in Auckland should not require increasing levels of subsidy	-2	1	1	-3	-3
3	Dropping children at school is the main cause of peak hour congestion in Auckland	-2	-3	0	0	1
4	Climate change, increasing oil prices, and public health issues are realities that must always be taken into account when planning the Auckland transport system	2	0	-1	1	3
5	Auckland policies should favour and incentivise walking, cycling, buses, ferries and trains over the private vehicle	1	0	3	0	2
6	Public transport must be accessible and safe and provide a sense of independent mobility	0	3	0	1	2
7	The increasing cost of transport is a key issue for Auckland, especially families, young and low income people	-1	0	-1	0	1
8	Auckland requires an integrated public transport network that enables people to move frequently and efficiently	2	2	3	3	1
9	Public transport in Auckland should be reliable. Currently, punctuality of public transport is a major issue in Auckland, which discourages people from using public transport	0	2	-1	0	0
10	Public transport fares should be kept low and affordable for all sections of the community	0	0	0	2	-3
11	Over time, improvements in public transport have benefitted affluent areas and the CBD most	-3	1	-2	-2	0
12	Driving a car is cheaper in Auckland than taking the public transport	-1	0	-3	-2	-2
13	Auckland must develop public transport that is a realistic alternative to private car use	3	1	2	1	1
14	Auckland's future economic growth relies on continuing investment in rail	0	-2	0	1	-2
15	Money spent on Auckland's motorway would be better spent on the City Rail Link (CRL)	2	-3	1	-1	0
16	Public transport projects mainly invest in Auckland CBD	-2	1	-2	-2	-2
17	Business-as-usual emphasis on motorways and parking facilities still dominates Auckland's transport planning	1	-1	-3	-1	0
18	The City Rail Link (CRL) supports only the CBD's development, while ignoring wider Auckland travel needs	-3	0	-1	-1	-1
19	Auckland Council needs to ensure future developments are well served by public transport	1	-2	2	2	0
20	An integrated transport system requires strategic investment and close co-operation between Auckland Council and central government	3	3	2	3	-1
21	Aucklanders must be involved in a meaningful ways in transport decisions	0	-1	0	0	0
22	Transport planning and decision-making processes must reflect and respect iwi, hapū, whanau and kaitiaki, and enable effective participation by Māori and ethnic communities	-1	-1	-2	-1	-3

23	It is impossible for Auckland Council to genuinely consult communities, as it is an expensive and complex process	-1	-1	0	-3	-1
24	Central government should increase its funding for Auckland's public transport projects	0	-2	1	2	-2
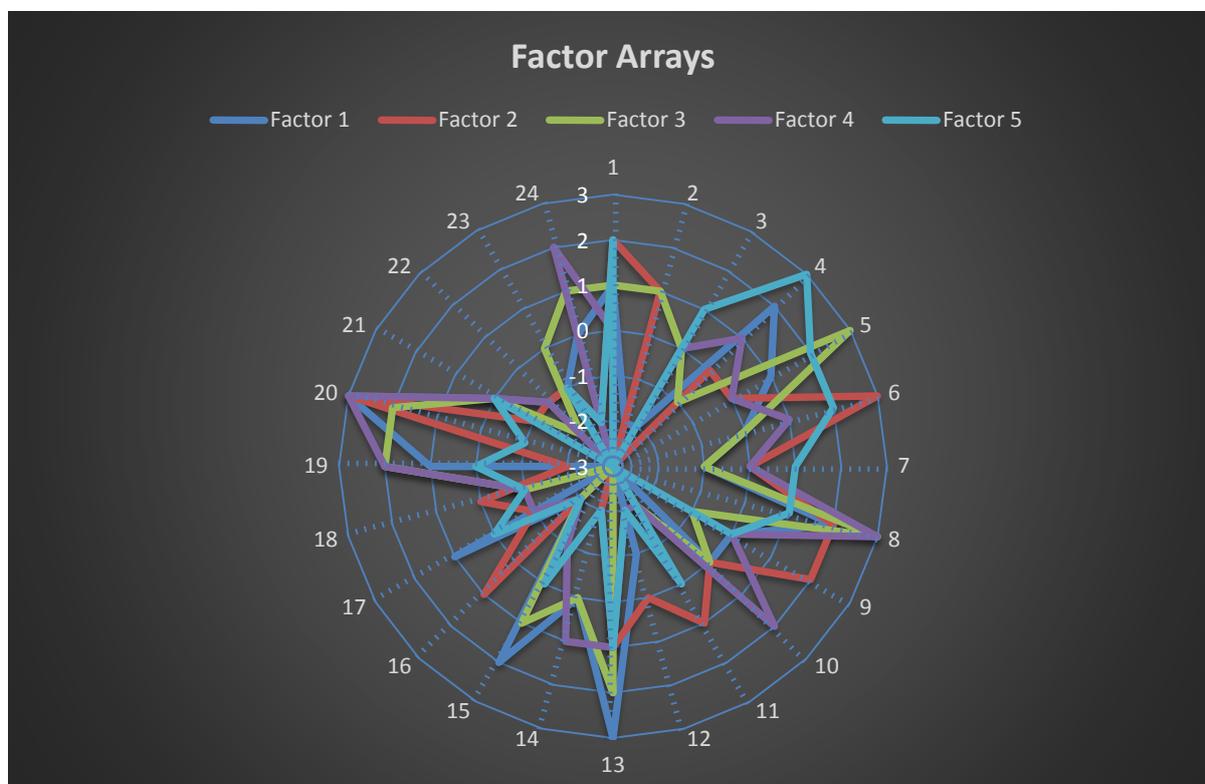
Figure1: Graphical representation of the factor loadings as shown in Table 4 (note that the outer ring represents +3 and the inner point -3, numbers 1-24 represent the 24 statements comprising the Q set)

4. Discussion of results

Factor interpretation is based upon the analysis of the patterning of the items in the factor array with the assistance of comments from the post-sort interviews. Ultimately the interpretation process aims to 'uncover, understand and fully explain' (Watts & Stenner, 2012: 181) the perspective encapsulated by the factor and shared by the participants loading on that factor. In this section each factor is briefly described from the factor's position, in association with a summary of the demographic data of the participants who distinctively loaded on that factor. For additional clarification, rankings of items are included and participant comments are cited. Ranking notation includes the item number and the ranking it achieved in the relevant factor; for example in factor 4, item 2 was ranked -3 and is therefore notated as (2: -3).

The five factors show two consensus statements (Table 4), where the level of agreement is very close. Statement 13 generates the greatest level of positive unanimity with all factors being broadly supportive of this statement, whilst statement 21 generates an ambivalent response from all factors.

Table 4: Consensus statements

Statement		Factor 1		Factor 2		Factor 3		Factor 4		Factor 3	
		Q-SV	Z-SCR	Q-SV	Z-SCR	Q-SV	Z-SCR	Q-SV	Z-SCR	Q-SV	Z-SCR
13*	Auckland must develop public transport that is a realistic alternative to	3	1.23	1	0.75	2	1.16	1	0.61	1	0.65

	private car use									
21	Aucklanders must be involved in a meaningful ways in transport decisions	0	0.46	-1	-0.36	0	0.07	0	0.24	0	0.00

Factor 1 – Making public transport a realistic alternative to cars

Factor 1 has an eigenvalue of 4.20 and explains 21 percent of the study variance. Seven participants are significantly associated with this factor. Four of the participants represent transport advocacy community groups, two works for central government, and the other works for Auckland Transport. As show in Table 4 the highest level agreement between all five factors relates to the need for Auckland to develop public transport that presents a realistic alternative to private vehicle use, Factor 1 being strongest advocate for this position (13: +3). Close co-operation will be required between central government and Auckland Council to manage the strategic investment needed to achieve this integrated and effective transport system (20: +3). The city rail link (CRL) is an important component in the development of public transport, and is more deserving of investment than Auckland's motorways (15: +2) (Table 5), despite the business-as-usual emphasis on motorways and parking facilities that still dominates transport planning (17: +1).

While public transport can have some impact on congestion (1: +1), peak hour congestion has a number of causes and is not primarily caused by children being driven to school (3: -2). However, climate change, increasing oil prices, and public health issues are realities that must always be taken into account when planning the Auckland transport system (4: +2). Where necessary subsidies should be increased to support public transport (2: -2), as an integrated network enables people to move frequently and efficiently around the city (8: +2). Experience thus far has shown that public transport investments have been spread across the city (16: -2) and improvements have benefitted the whole city (11: -3); the city rail link is expected to continue this trend (18: -3). However, like Factors 2 and 3, Factor 1 is ambivalent about whether public transport fares need to be kept low and affordable for all sections of the community (10: 0), and like Factor 3, is not convinced that increasing transport costs are a key issue especially families, young and low income people (7: -1 equal with Factor 3).

Like all the other factors Factor 1 sees community consultation as achievable, but is not convinced of its merits (23: -1; 21: 0). However, along with Factors 2 and 4, Factor 1 is least negative about transport planning and decision-making processes reflecting and respecting iwi, hapū, whanau and kaitiaki, and enabling effective participation by Māori and other ethnic communities (22: -1).

Table 5: Factor 1 distinguishing statements

Distinguishing Statements		Q-SV	Z-SCR
17	**Business-as-usual emphasis on motorways and parking facilities still dominates Auckland's transport planning**	**1**	**1.02***
18	*The City Rail Link (CRL) supports only the CBD's development, while ignoring wider Auckland travel needs*	*-3*	*-1.70*

(P<.05, * indicates significance of P<.01) **Bold** = ranked higher/higher equal with no more than one other factor. *Italics* = ranked lower/lower equal with no more than one other factor

Factor 2 – Developing an integrated public transport system

Factor 2 has an eigenvalue of 2.00 and explains 10 percent of the study variance. Two participants are significantly associated with this factor; both work for central government. For Factor 2 the safety and accessibility of public transport is paramount because it must provide a sense of independent mobility (6: +3), and in common with Factors 1, 3 and 4, Factor 2 believes their aspirations can only be fulfilled by an integrated transport system which receives strategic investment from Auckland Council and central government working in close co-operation (20: +3). Building an integrated public transport network will enable people to move frequently and efficiently (8: +2), and will help to overcome reliability issues. Currently, punctuality of public transport is a major issue in Auckland, which discourages people from using public transport (9: +2).

Although dropping children at school is the not the main cause of peak hour congestion (3: -3), for Factor 2 more than any other factor, public transport does have the ability to reduce congestion and improve economic efficiency in Auckland (1: +2). Factor 2 thinks public transport should not require increasing levels of subsidy (2: +1), and central government should not increase its funding for Auckland's public transport projects (24: -2).

Factor 2 is concerned with what they see as disproportionate investment in central Auckland and the more affluent suburbs, believing that public transport investment is mostly concentrated in the CBD (16: +1) (Table 6), and over time improvements in public transport have benefitted affluent areas and the CBD most (11: +1). Factor 2 is not a fan of rail, more than any other factor they think the City Rail Link (CRL) may only support CBD development, while ignoring wider Auckland travel needs (18: 0). Money spent on Auckland's motorway would not be better spent on the City Rail Link (15:-3), and the argument that Auckland's future economic growth relies on continuing investment in rail lacks merit (14:-2)

Factor 2 could be more easily persuaded than any other factor that driving a car in Auckland could be cheaper than taking the public transport (12: 0), and perhaps as a consequence, like Factors 4 and 5, is least convinced that Auckland must develop public transport that is a realistic alternative to private car use (13: +1). Arguments that Auckland Council should ensure future developments are well served by public transport (19: -2) are also not convincing. Factor 2 is ambivalent about whether policies should favour and incentivise walking, cycling, buses, ferries and trains over the private vehicle (5: 0), and keeping public transport fares low and affordable for all sections of the community (10: 0)

Factor 2 is least focused of all the factors on meaningful public engagement in decision making (21: -1) but if it does happen is, jointly with Factors 1 and 4, least hostile to transport planning and decision-making processes reflecting and respecting iwi, hapū, whanau and kaitiaki, and enabling effective participation by Māori and ethnic communities (22: -1).

Table 6: Factor 2 distinguishing statements

Distinguishing Statements		Q-SV	Z-SCR
9	**Public transport in Auckland should be reliable. Currently, punctuality of public transport is a major issue in Auckland, which discourages people from using public transport**	**2**	**1.11**
16	**Public transport projects mainly invest in Auckland CBD**	**1**	**0.49***
15	*Money spent on Auckland's motorway would be better spent on the City Rail Link (CRL)*	*-3*	*-1.87*

(P<.05, * indicates significance of P<.01) **Bold** = ranked higher/higher equal than with no more than one other factor. *Italics* = ranked lower/lower equal than with no more than one other factor

Factor 3 – Making public transport an efficient mode choice

Factor 3 has an eigenvalue of 3.00 and explains 15 percent of the study variance. Four participants are significantly associated with this factor. Two participants represent immigrant community groups, one works for Auckland Transport, and the other is an independent consultant.

According to this factor, a business-as-usual emphasis on motorways and parking facilities no longer dominates Auckland's transport planning (17: -3), but a fully integrated transport system requires strategic investment and close co-operation between Auckland Council and central government (20: +2). Factor 3 is strongly in favour of policies which favour and incentivise walking, cycling, buses, ferries and trains over the private vehicle (5: +3). Rather than this focus reflecting concern regarding climate change, increasing oil prices, and public health issues (4: -1), the imperative is the efficient movement of people facilitated by an integrated public transport network (8: +3). Auckland must therefore, develop public transport that is a realistic alternative to private car use (13: +2). Public transport project investment and improvements have so far reached beyond the CBD and the other more affluent suburbs (16: -2; 11: -2), and Auckland Council needs to ensure future developments are well served by public transport (19: +2).

Like Factors 1, 4 and 5, Factor 3 does not place a premium on public engagement in transport decisions (21: 0), including engagement with iwi, hapū, whanau and kaitiaki, and enabling effective participation by Māori and other ethnic communities (22: -1).   Factor 3 is less concerned with affordability, accessibility and punctuality than any other factor, as public transport is already cheaper than driving a car in Auckland (12: -3). This being the case, and coupled with avoiding increasing levels of subsidy for public transport (2: +1), means that Factor 3 is ambivalent about the need to keep public transport fares low and affordable for all sections of the community (10: 0). This ambivalence extends to ensuring that public transport can provide accessible, safe and independent mobility (6: 0). The increasing cost of transport is not seen as a key issue for families, young and low income people (7: -1), and a lack of reliability and punctuality is not seen as a major issue discouraging people from using public transport (9: -1).

Table 7: Factor 3 distinguishing statements

	Distinguishing Statements	**Q-SV**	**Z-SCR**
17	*Business-as-usual emphasis on motorways and parking facilities still dominates Auckland's transport planning*	*-3*	*-1.78*
12	*Driving a car is cheaper in Auckland than taking the public transport*	*-3*	*-1.80*

(P<.05, * indicates significance of P<.01) **Bold** = ranked higher/higher equal than with no more than one other factor. *Italics* = ranked lower/lower equal than with no more than one other factor

Factor 4 – Keeing public transport fares low and affordable

Factor 4 has an eigenvalue of 3.60 and explains 18 percent of the study variance. Three participants are significantly associated with this factor; one works for Auckland Transport, one is an academic, and the other is a national level politician.

Again Auckland is seen to require an integrated public transport network that enables people to move frequently and efficiently (8: +3). An integrated transport system requires strategic investment and close co-operation between Auckland Council and central government 20: +3). It is central government's responsibility to increase its funding for Auckland's public transport projects (24: +2) (Table 8), and Auckland Council's responsibility to continue investing in projects beyond the CBD (16: -2; 11: -2), and to ensure future developments are well served by public transport (19: +2). Subsidies are a legitimate way of funding public transport in Auckland (2: -3). Auckland's future economic growth relies on continuing investment in rail (14: +1), but money spent on Auckland's motorway would not be better spent on the City Rail Link (CRL) (15: -1).

While Factor 4 does not agree that it is impossible for Auckland Council to genuinely engage in consultation with communities (23: -3), like most of the other factors, Factor 4 is fairly ambivalent about the need for public engagement in transport decision-making (21: 0), and in relation to Māori and other ethnic communities (22:-1), although with Factor 1 it is the least unenthusiastic.

Factor 4 is also more ambivalent than most factors about whether Auckland's policies should favour and incentivise walking, cycling, buses, ferries and trains over the private vehicle (5: 0), and along with Factors 2 and 5, Factor 4 although mildly supportive, is the least convinced that Auckland must develop public transport that is a realistic alternative to private car use (13: +1). Public transport is cheaper than driving a car in Auckland (12: -2) and it is more important to Factor 4 than any other factor that public transport maintains its affordability for all sections of the community (10: +2).

Table 8: Factor 4 distinguishing statements

	Distinguishing Statements	**Q-SV**	**Z-SCR**
24	**Central government should increase its funding for Auckland's public transport projects**	**2**	**1.51**
15	Money spent on Auckland's motorway would be better spent on the City Rail Link (CRL)	-1	-0.87

(P<.05, * indicates significance of P<.01) **Bold** = ranked higher/higher equal than with no more than one other factor. *Italics* = ranked lower/lower equal than with no more than one other factor

Factor 5 – Future proofing Auckland's transport system

Factor 5 has an eigenvalue of 2.40 and explains 12 percent of the study variance. Two participants are significantly associated with this factor. One is a local politician, and the other represents an immigrant community group.

Factor 5 is the least convinced that an integrated transport system requires strategic investment and close co-operation between Auckland Council and central government (20: -1), but most concerned that climate change, increasing oil prices, and public health issues are taken into account when planning the transport system (4: +3). For this factor such concerns translate into placing more emphasis than any other factor on two issues; keeping public transport fares low and affordable for all sections of the community (10: +3), and public transport's ability to reduce congestion and improve economic efficiency in Auckland (1: +2). Consequently, policies should favour and incentivise walking, cycling, buses, ferries and trains over the private vehicle (5: +2).

Taking public transport is cheaper in Auckland than driving a car (12: -2), but this does not stop Factor 5 being most concerned about the increasing cost of transport for especially families, young and low income people (7: +1). Public transport must therefore, be accessible and safe and provide a sense of independent mobility (6: +2). Factor 5 agrees with all the other factors that Auckland requires an integrated public transport network that enables people to move frequently and efficiently (8: +1) and that Auckland must develop public transport that is a realistic alternative to private car use (13: +1) but places less of an emphasis on moving people efficiently, and realising car alternatives than the other factors. More than any other factor, Factor 5 is against central government increasing its funding for Auckland's public transport projects (24: -2), and is also least convinced that investment in rail will stimulate economic growth (14: -2).

Factor 5 is neutral about Aucklanders need to be involved in a meaningful ways in transport decisions (21: 0) but is least concerned of any factor that transport planning and decision-making processes should reflect and respect iwi, hapū, whanau and kaitiaki, and enable effective participation by Māori and ethnic communities (22: -3).

Table 9: Factor 5 distinguishing statements

Distinguishing Statements		Q-SV	Z-SCR
20	*An integrated transport system requires strategic investment and close co-operation between Auckland Council and central government*	*-1*	*-0.65**

(P<.05, * indicates significance of P<.01) **Bold** = ranked higher/higher equal than with no more than one other factor. *Italics* = ranked lower/lower equal than with no more than one other factor.

5. Conclusion

The main aim of this research is to identify community and professional opinions, judgements, and preferences concerning public transport policy goals in Auckland. The Q-analysis reveals cross-cutting patterns of viewpoints which are not necessarily polarised despite the different professional, cultural, and organisational backgrounds of the participants. Indeed, there are a number of perspectives and preferences that appear to unite the majority of stakeholders. All five factors want public transport policy to present a mechanism for making public transport a serious alternative to private motor vehicle use. Variation in perspectives are seen in issues such as how public transport should be funded and priced, the importance of rail within the public transport mix, and the relative importance of affordability and accessibility.

As already noted there is a high level of positive consensus across all five factors concerning the need to develop public transport in Auckland that presents a serious alternative to private vehicles. This perspective is supported by a review of the factor array (see Table 3 and Figure 1) which reveals that there are in total only six out of a possible ten statements which receive a +3 loading from one or more factors. These statements in sum expand the emphasis on public transport's viability as an alternative mode to include the integration of the public transport network to ensure accessibility, safety, frequency and efficiency. Alternative modes which could be expected to de-carbonise the transport system are to be favoured and incentivised based on effective national-local government

relationships and strategic investment. This outlook is further reinforced by noting that only five statements have no negative loadings across all 5 factors, four of those, having received at least one +3 loading. The additional statement relates to the ability of public transport to improve economic efficiency by reducing congestion.

By contrast, the -3 loadings are split across 10 statements which is the maximum diversity that could have been achieved with the Q sorting frequency distribution used for this study. These negative loadings are split across a range of issues including consultation, fare setting, public transport subsidies, and policy focus on the CBD and business as usual perspectives. What is more striking is complete lack of positive factor loadings for five statements. No factor agrees that driving in Auckland is cheaper than using public transport, and that the CRL only supports CBD development. Significantly, the other three statements which all receive no positive factor loadings all relate to community consultation. Whilst there is agreement that cost and complexity does not prohibit Auckland Council from engaging in genuine community consultation, no factor ranks meaningful involvement in consultation higher than zero. Further, no priority is placed on effective participation and respect for Maori (the indigenous population) and other ethnic communities in transport planning and decision-making, with this statement receiving no higher than a -1 ranking across all factors.

As a strategic document The Auckland Plan provides transport planning over the next 30 years. The Plan aspires to radically transform a car-dominant transport system into an integrated public transport network by building rail tunnels under the CBD, rail extension to the airport, and an additional harbour crossing. Imran and Pearce (2015) argue that the Auckland Plan will have little impact on the public transport system in the city due to its focus on mega public transport projects that have limited or conditional funding. Instead of focusing on a few mega-projects they emphasise 'small fixes' in the public transport network that can have significant positive impacts. This research suggests that public transport development should not look to support single imperatives such as social, economic, environmental, or service agendas. Instead policies and projects in Auckland should rather develop a series of goals and priorities at strategic, tactical and operational levels to meet multiple imperatives. Such goals and priorities may be contested and debated by different stakeholders but such debate itself has enormous value. Currently such debate is absent in Auckland. The five factors identified in this research add value to the development of public transport policy goals in Auckland by incorporating stakeholder's shared understandings of, and aspirations for public transport priorities and investment decisions, which support strategic investment, and maximise integration and accessibility. Other cities can learn from the stakeholder prioritisation seen in this research of an efficient and integrated public transport network which can present a realistic alternative to the car. This is only achievable by increasing funding for public transport network improvements to provide affordable mobility to the majority of the population.

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