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## APPENDICES

### APPENDIX A

- Advanced Aircraft Training Climate Expert Questionnaire (AATCe-Q) -



**Informed consent for participation in an academic research study  
in the  
Department of Human Resource Management**

**THE DEVELOPMENT OF A SCALE TO MEASURE  
PERCEPTIONS OF THE ADVANCED AUTOMATED AIRCRAFT  
TRAINING CLIMATE**

Research conducted by PhD student:

P. Naidoo (21346039)  
Cell: +27 83 620 7299

Dear Subject Matter Expert

You are invited to participate in an academic research study because of your exceptional level of expertise and knowledge in the topic of interest, namely **advanced automated aircraft training**. This study is being conducted by Preven Naidoo (BCom, BCom Hons, MPhil, ATPL); a doctoral student in Organisational Behaviour at the University of Pretoria.

The purpose of this research survey is to establish the relevance of a number of items, questions or statements which attempt to tap the domain of a construct called **Perceptions of the Advanced Automated Aircraft Training Climate**. This questionnaire is the first phase in developing a psychometric scale to measure the training environment experiences of pilots operating advanced automated aircraft in the commercial aviation industry.

Please note:

- This study involves an anonymous survey which has been endorsed by the Airline Pilots' Association of South Africa (ALPA-SA). Your name will not appear on the questionnaire and the answers you give will be treated as strictly confidential. You cannot be identified from the answers that you give.

- By completing the questionnaire and returning it, you give your consent to participate in the study on a voluntary basis. Any data received from you will be used strictly for academic purposes and can only be accessed by the researchers.
- Your participation in this study is very important to us. Future research enhancing flight safety may depend on it. However, you may choose not to participate.
- If you do participate, please answer the questions in the attached questionnaire as completely and as honestly as possible. It should not take more than 20-30 minutes of your time to complete the questionnaire.
- This expert questionnaire consists of two parts. The first section asks for your biographical details. The second section asks for your opinion about the construct under investigation.
- The results of the study may be published in an academic journal. We will provide you with a summary of our findings on request (please supply your e-mail address on the last page for this, or send us a separate e-mail if you wish to remain anonymous).
- Please contact me, Preven ([freudian@telkomsa.net](mailto:freudian@telkomsa.net)) or one of my supervisors, Professor Leo Vermeulen ([lvermeul@tiscali.co.za](mailto:lvermeul@tiscali.co.za)) or Professor Pieter Schaap ([pieter.schaap@up.ac.za](mailto:pieter.schaap@up.ac.za)), if you have any questions or comments regarding the study. Please indicate that you have read and understand the information provided above by putting an X in this box .

### Expert's biographical data

Please answer the following questions to reflect the information that best represents you, by placing an X in the relevant box where applicable and answering the question or statement. This information is important in order to compile an accurate description of the panel of experts.

1. Age (years):

2. Work experience in aviation, psychology, or another relevant field (years):

3. Gender:

<input type="checkbox"/>	<b>Female</b>
<input type="checkbox"/>	<b>Male</b>

4. Please indicate your relevant capacity and applicable title (e.g., training captain, professor, etc.):

Capacity		Title
<input type="checkbox"/>	Airline Pilot	
<input type="checkbox"/>	Academic	
<input type="checkbox"/>	Both of the above	
<input type="checkbox"/>	Neither of the above	

5. Your highest academic qualification (please also specify the field of study, where applicable):

		Major field/s of specialisation
<input type="checkbox"/>	Secondary School	
<input type="checkbox"/>	Diploma	
<input type="checkbox"/>	Bachelors	
<input type="checkbox"/>	Honours	
<input type="checkbox"/>	Masters	
<input type="checkbox"/>	Doctorate	

6. Years of experience in training pilots on advanced automated aircraft, if applicable:

7. Estimated flight training experience, if applicable:

Instruction in advanced automated aircraft	Hours
Simulator	
Actual Aircraft	
Total instructional experience in all aircraft types	

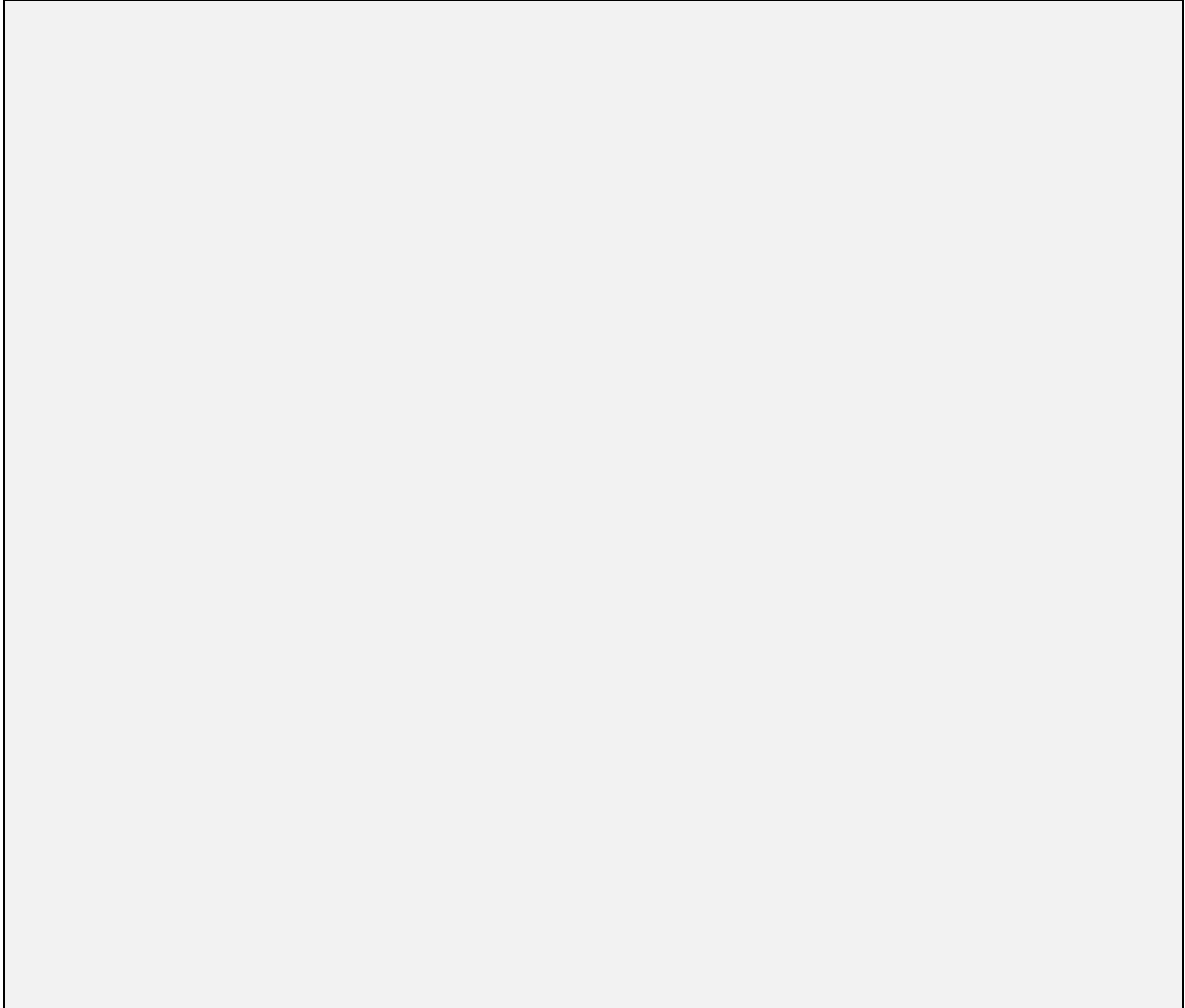
8. Flight instructor's grade, if applicable:

9. Total flight time, if applicable (hours):

10. Please list the relevant types of aircraft you've instructed on (if applicable):



11. Please describe any pertinent information regarding your expertise which you think the researchers may find of interest (e.g., threat and error management, CRM, flight safety, flight training, accident investigation, applied psychology, etc.):



## Background to the study

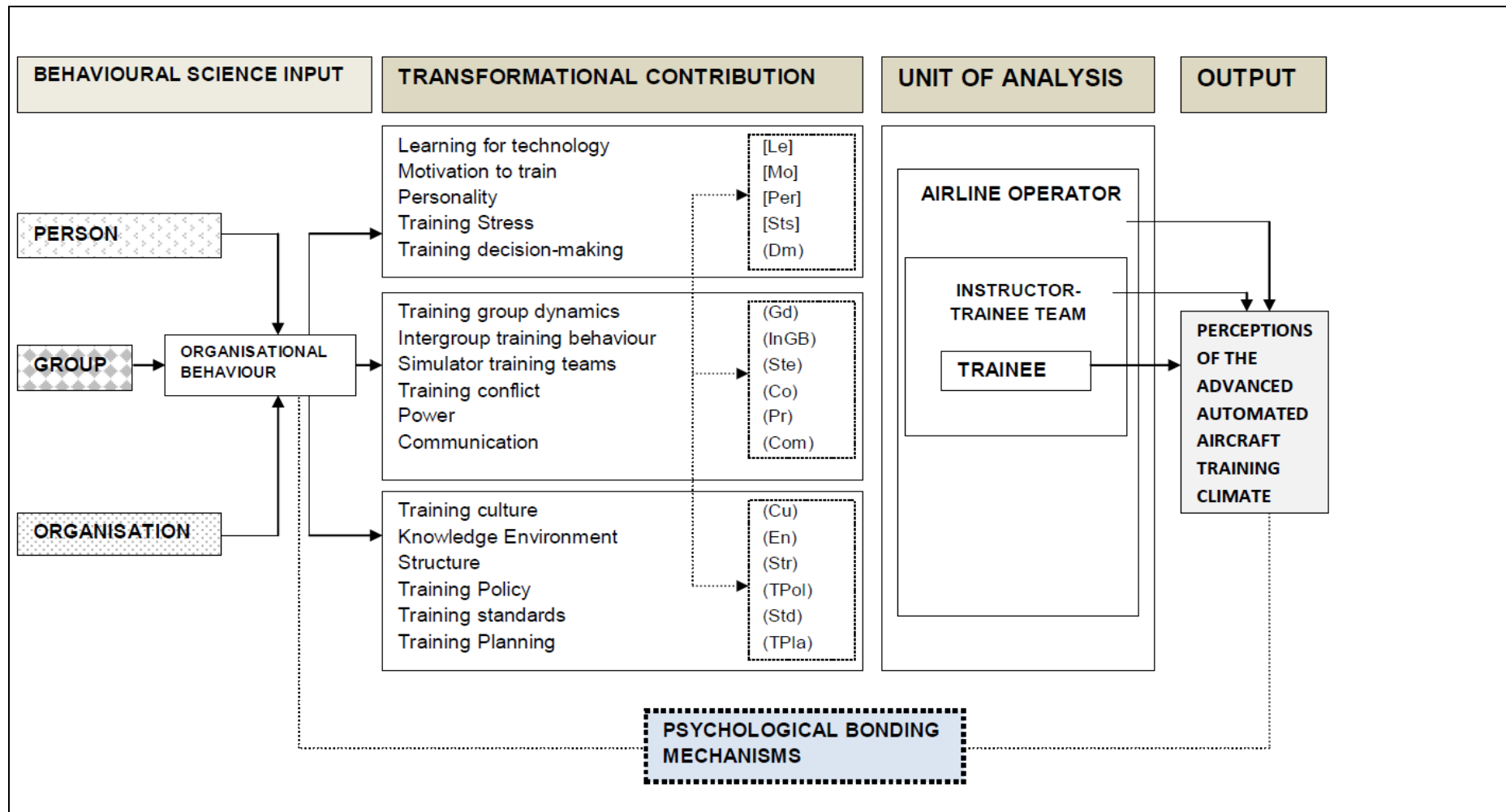
In the behavioural sciences, organisational researchers are concerned with the impact that systems have on groups and individuals. For this study, the training climate refers to ‘all factors in the person, learning and organisation that influence transfer of knowledge to the job function’.

*Climate* must not be confused with *culture*, and the literature points out that an organisational climate refers to individuals’ subjective summated sense made about understanding of policies, procedures, structure, inter- and intrapersonal constructs,. An airline pilot’s perception of the training climate refers to their cognitive sense making of the psychological and organisational environment. The elements of an aviation training climate are the following:

ELEMENT LEVEL	DESCRIPTION
1. <b>Microsphere: <u>trainee pilot</u></b>	<u>Perceptions</u> of learning and psychological self (academic, social, etc)
2. <b>Mesosphere: <u>instructional group</u> (i.e., instructor-trainees)</b>	<u>Perceptions</u> of teaching and interaction with the instructor and co-trainee
3. <b>Macrosphere: <u>airline operator</u> (i.e., the organisation)</b>	<u>Perceptions</u> of business atmosphere, organisational structure, policies, standards, planning, etc.

After conducting a comprehensive literature review of the relevant body of knowledge on the subject, a theoretical model of the construct (see the next figure) was developed. A list was compiled of 17 critical concepts that are important in measuring the construct. The items or statements operationalising the main construct (as used in this questionnaire) were then generated from these 17 conceptual components.

The ‘super-construct’ was labelled **Perceptions of the Advanced Automated Aircraft Training Climate:**



Advanced aircraft training is a combination of both simulator and route training activities. Hence, the question items or statements relate to respondents' most recent simulator and/or route training experiences where applicable, on the relevant advanced automated aircraft.

By completing this questionnaire, you will make a significant contribution to our understanding of which items in the questionnaire are essential, as opposed to ones that are useful but not essential, or not necessary at all to reflect the psychological and organisational dimensions of a modern airline pilot's training experiences. In order to ensure the integrity of the survey, it is important that you consider all the items.

**There are no correct or incorrect answers.**

Please consider each item individually based on your experience. Indicate your answer with an 'X' in either the 'Essential', 'Useful but not essential' or 'Not necessary' category. Also please indicate whether the item is clear or not clear to you. Please mark only one of the options in each case.

- If you mark a statement as '**Essential**', this indicates that you agree that the item is strongly related to the domain and context.
- If you mark a statement as '**Useful, but not essential**', this indicates that you consider the item to be related to the topic, but that you do not think it is important to include in the final questionnaire for scale development.
- If you mark a statement as '**Not necessary**', this indicates that you do not think the question or statement is associated with the construct under investigation.
- If you think that an item is **not** relevant in the particular domain (person, group or organisation) where it is listed, but you feel that it is essential in one of the other domains, please mark it as "essential" and **write the letter** of the applicable domain in the last column.

Example of how to answer the questionnaire:

Number	Item statement	Consider the relevance of the item. Is it...			Item is clear	Item is not clear	new domain (P,G,O)
		ESSENTIAL	USEFUL, BUT NOT ESSENTIAL	NOT NECESSARY			
		...in tapping the content of the construct called <b>Perceptions of the advanced automated aircraft training climate?</b>					
<b>TRAINING CLIMATE EXPERT QUESTIONNAIRE (ORGANISATION): <u>THE AIRLINE</u></b>							
<b>D1</b>	The company's instructors are experts in the aviation industry.	<input checked="" type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b>D2</b>	My company has a simulator.	<input type="checkbox"/> essential	<input checked="" type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<b>O</b>
<b>D3</b>	I prefer working in a company with multi crew glass cockpit aircraft.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input checked="" type="checkbox"/> not necessary	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<b>G</b>
<b>D4</b>	I enjoy working with computers.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input checked="" type="checkbox"/> not necessary	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b>D5</b>	My company ensures that its pilots are trained in good and serviceable flight simulators.	<input checked="" type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

The **Advanced Aircraft Training Climate Expert Questionnaire (AATCE-Q)** starts on the next page.

Number	Item statement	Consider the relevance of the item. Is it...					
		ESSENTIAL		USEFUL, BUT NOT ESSENTIAL		NOT NECESSARY	
		...in tapping the content of the construct called <b>Perceptions of the advanced automated aircraft training climate?</b>					
TRAINING CLIMATE EXPERT QUESTIONNAIRE (ORGANISATION): <u>THE AIRLINE</u>					Item clear	Item not clear	new domain (P,G,O)
<b>A1</b>	Pilot training at my airline is in line with company goals.	<input checked="" type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b>A2</b>	My company's training produces world-class pilots.	<input checked="" type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b>A3</b>	I have noticed a steady improvement with regard to pilot training at this company.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>A4</b>	I know what my company's training goals are.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>A5</b>	My company has talented people managing airline pilots' training.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>A6</b>	Pilot training at this company is professional.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>A7</b>	Management follows the regulator rules appropriately.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>A8</b>	Pilot training on this aircraft is well organised at this company.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>A9</b>	Pilots who are engaged in simulator training are professionally attired.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>A10</b>	I understand what the company expects of me when I am in training.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>A11</b>	It is easy to share my training experiences with colleagues at this company.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>A12</b>	Training at my airline produces safe pilots.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>A13</b>	There is a well-established chain of authority for pilot training on this aircraft.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>A14</b>	This airline gives its pilots an appropriate amount of preparation work before training.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>A15</b>	The paperwork involved in training for this aircraft is appropriate.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>A16</b>	It is easy for me to appeal for assistance if I encounter a training problem at this airline.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>A17</b>	There is sufficient training guidance from the company.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	



Number	Item statement	Consider the relevance of the item. Is it...					
		ESSENTIAL		USEFUL, BUT NOT ESSENTIAL		NOT NECESSARY	
		...in tapping the content of the construct called <b>Perceptions of the advanced automated aircraft training climate?</b>					
TRAINING CLIMATE EXPERT QUESTIONNAIRE (ORGANISATION): <u>THE AIRLINE</u>					item clear	item not clear	new domain (P,G,O)
<b>A18</b>	The standard operating procedures (SOPs) for learning to fly this aircraft are adequate.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>A19</b>	The company provided me with sufficient time to prepare for training on this aircraft.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>A20</b>	The simulators my company uses to train its pilots are in good condition.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>A21</b>	I feel motivated by my airline to train for this aircraft.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>A22</b>	The training department at my company is flexible.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>A23</b>	The airline is very supportive of its pilots' learning requirements for this aircraft.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>A24</b>	My company's culture supports training for new technology aircraft.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>A25</b>	There is sufficient feedback about my training on this aircraft.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>A26</b>	Pilot training at my airline follows civil aviation requirements.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>A27</b>	My company uses only current training material.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	

Number	Item statement	Consider the relevance of the item. Is it...					
		ESSENTIAL		USEFUL, BUT NOT ESSENTIAL		NOT NECESSARY	
		...in tapping the content of the construct called <b>Perceptions of the advanced automated aircraft training climate?</b>					
TRAINING CLIMATE EXPERT QUESTIONNAIRE (GROUP): <u>INSTRUCTOR-TRAINEE TEAM</u>					item clear	item not clear	new domain (P,G,O)
<b>B1</b>	I find it easy to identify with my instructor.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>B2</b>	I can easily identify with my simulator partner.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>B3</b>	I work well with others during simulator training exercises.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>B4</b>	Instructors communicate their expectations effectively.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>B5</b>	I learn better when I work as a member of the crew.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>B6</b>	I am always at ease when interacting with my flight instructor.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>B7</b>	I always find my simulator partner prepared for training.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>B8</b>	I trust my simulator partner.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>B9</b>	I am confident that my instructor will be fair.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>B10</b>	I operate well as a crew member in the simulator.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>B11</b>	My instructor is willing to listen.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>B12</b>	I communicate well with my simulator partner.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>B13</b>	I feel secure in the decisions made by my simulator partner.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>B14</b>	I make good decisions with my partner in the simulator.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>B15</b>	I find that decision-making with my simulator partner is equitable.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>B16</b>	I am motivated by my instructor.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>B17</b>	When training for this aircraft, I feel that I am part of a team.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	





Number	Item statement	Consider the relevance of the item. Is it...			item clear	item not clear	new domain (P,G,O)	
		ESSENTIAL	USEFUL, BUT NOT ESSENTIAL	NOT NECESSARY				
		...in tapping the content of the construct called <b>Perceptions of the advanced automated aircraft training climate?</b>						
<b>TRAINING CLIMATE EXPERT QUESTIONNAIRE (GROUP): <u>INSTRUCTOR-TRAINEE TEAM</u></b>								
<b>B18</b>	The instructors on this aircraft are committed.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>		
<b>B19</b>	Instructors are similar in how they teach pilots to fly this aircraft.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>		
<b>B20</b>	I am always paired with someone who is committed to performing well.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>		
<b>B21</b>	I enjoy being evaluated as a member of a crew.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>		
<b>B22</b>	Instructors on this fleet follow company policy.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>		
<b>B23</b>	The instructors on this aircraft avoid overloading pilots with unnecessary information.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>		
<b>B24</b>	I always bond well with my simulator partner.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>		
<b>B25</b>	Decisions made in flight simulator training exercises are team-based.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>		
<b>B26</b>	The instructors on this aircraft are friendly.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>		
<b>B27</b>	I get sufficient feedback on my flight training performance.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>		

Number	Item statement	Consider the relevance of the item. Is it...					
		ESSENTIAL	USEFUL, BUT NOT ESSENTIAL	NOT NECESSARY			
		...in tapping the content of the construct called <b>Perceptions of the advanced automated aircraft training climate?</b>					
TRAINING CLIMATE EXPERT QUESTIONNAIRE (INDIVIDUAL): <u>TRAINEE</u>					item clear	item not clear	new domain (P,G,O)
<b>C1</b>	Pilots are in direct control of the training outcome.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>C2</b>	A good training session on this aircraft is a result of the trainee's actions.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>C3</b>	Evaluation of my flight training is objective.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>C4</b>	Adequate preparation improves flight training performance.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>C5</b>	I am always on time for a flight training session.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>C6</b>	I co-operate well when training in a simulator.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>C7</b>	I never feel rushed in the flight simulator.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>C8</b>	I easily express my opinion during flight training.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>C9</b>	I prepare sufficiently for training on this aircraft.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>C10</b>	After flight training, I feel a sense of mastery.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>C11</b>	I enjoy learning about this aircraft.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>C12</b>	Simulator training affects behaviour on the actual aircraft.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>C13</b>	I get along well with my flight simulator partners.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>C14</b>	I found my transition to advanced automated aircraft easy.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>C15</b>	I believe that if pilots do well in training, overall flight safety improves.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>C16</b>	I am happy with simulator training on this aircraft.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>C17</b>	I aim to do better at my next flight simulator training session by learning from my mistakes.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	



Number	Item statement	Consider the relevance of the item. Is it...					
		ESSENTIAL		USEFUL, BUT NOT ESSENTIAL		NOT NECESSARY	
		...in tapping the content of the construct called <b>Perceptions of the advanced automated aircraft training climate?</b>					
TRAINING CLIMATE EXPERT QUESTIONNAIRE (INDIVIDUAL): <u>TRAINEE</u>					item clear	item not clear	new domain (P,G,O)
<b>C18</b>	I have a positive relationship with my colleagues.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>C19</b>	The workload between trainees is balanced during a flight simulator training session.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>C20</b>	Pilots are judged as members of a team when they train in the flight simulator.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>C21</b>	I feel rewarded for the amount of work I put into flight training.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>C22</b>	The more work I put into my preparation for training on this aircraft, the better I will perform.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>C23</b>	Pilots who are prepared have no problems training for this aircraft.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>C24</b>	It is essential that pilots prepare adequately to pass a rating on this aircraft.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>C25</b>	I am in control of the outcome of my flight training on this aircraft.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>C26</b>	I enjoy studying the technical aspects of the aircraft.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>C27</b>	I always learn something new after undergoing training on this aircraft.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>C28</b>	I focus on the pertinent and relevant topics when learning about this aircraft.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>C29</b>	I reflect on my learning after a flight training experience.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>C30</b>	I look for additional information so as to gain a deeper understanding of this aircraft's systems.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>C31</b>	I know where to find specific information for this aircraft.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>C32</b>	It is important to know more than just what is required to pass.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	



Number	Item statement	Consider the relevance of the item. Is it...			item clear	item not clear	new domain (P,G,O)
		ESSENTIAL	USEFUL, BUT NOT ESSENTIAL	NOT NECESSARY			
		...in tapping the content of the construct called <b>Perceptions of the advanced automated aircraft training climate?</b>					
TRAINING CLIMATE EXPERT QUESTIONNAIRE (INDIVIDUAL): <u>TRAINEE</u>					item clear	item not clear	new domain (P,G,O)
<b>C33</b>	I find the training on this aircraft easy.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>C34</b>	I am relaxed in the flight simulator.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>C35</b>	I find the training on this aircraft easy.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>C36</b>	I do well in training for this aircraft.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>C37</b>	I look forward to my next flight training session.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>C38</b>	I sleep well the night before training on this aircraft.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>C39</b>	An appropriate level of stress helps me perform well in flight training for this aircraft.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>C40</b>	I'm comfortable undergoing training for this aircraft.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>C41</b>	I can control my anxiety so as to perform well in training.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>C42</b>	I enjoy spending extra time flight training.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>C43</b>	I am motivated to learn more about this aircraft.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>C44</b>	I am happy to be subjected to regular flight checks.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>C45</b>	I enjoy <u>route</u> training on this aircraft.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>C46</b>	I enjoy <u>simulator</u> training for this aircraft.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>C47</b>	If my simulator partner is having a bad day, I am not affected.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>C48</b>	I create a relaxed atmosphere in the flight simulator.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	



<b>C49</b>	The length of time spent simulator training is appropriate for this aircraft.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>C50</b>	I enjoy the free play flight simulator time on this aircraft.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>C51</b>	I aim to gain a deeper understanding of this aircraft.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	
<b>C52</b>	I learn more than the company requires me to.	<input type="checkbox"/> essential	<input type="checkbox"/> useful, but not essential	<input type="checkbox"/> not necessary	<input type="checkbox"/>	<input type="checkbox"/>	

### 1. Clarity

Aviation psychometric measurement items should be well written, distinct, and at an appropriate reading level for professional pilots employed on various types of advanced automated aircraft from airline organisations (in the private and the public sector), from a diverse population.

Please list any items that, in your opinion, are not clear. Also provide suggestions on how to clarify these items.

## 2. Comprehensiveness

Do you think that the dimensions (statements/questions) of the desired content behavioural domains are adequate in tapping the construct?

Please suggest which items should be deleted; or provide additional/alternative items you think may be relevant.

3. Please provide us with your email address if you would like to receive feedback:

**Thank you for your time and participation. Please save this document then e-mail the completed questionnaire to: [freudian@telkomsa.net](mailto:freudian@telkomsa.net)**



**APPENDIX B**  
- Survey Invitation Letter-



## Participation in an academic research study

# Advanced Aircraft Training Climate Questionnaire (AATC-Q)

UNIVERSITY OF PRETORIA  
Faculty of Economic and Management Sciences (EMS)  
Department of Human Resource Management  
Telephone: 012 420 3074

Dear Colleague

You are invited to participate in an academic research study because of your experience and knowledge in the research area, namely **advanced automated aircraft training**. This study is being conducted by the unit of Organisational Behaviour at the University of Pretoria.

The purpose of this study is to explore your perceptions and experiences regarding training to operate advanced automated aircraft. The information obtained from this project will add to the current body of knowledge on human factors, automation, pilot training and flight safety. Your co-operation in completing the questionnaire will be a valuable input to the overall success of the study.

Please note:

This study involves an anonymous survey which has been endorsed by the Airline Pilots' Association of South Africa (ALPA-SA). Your name will not appear on the questionnaire and the answers you give will be treated as strictly confidential. Furthermore, you cannot be identified from the answers that you give.

By completing the questionnaire and returning it, you give your consent to participate in the study on a voluntary basis. Any data received from you will be used strictly for academic purposes and can only be accessed by the researchers.



Your participation in this study is very important to us. Future research enhancing flight safety may depend on it. However, you may choose not to participate.

If you do participate, please answer the questions in the attached questionnaire as completely and as honestly as possible. It should not take more than 20-30 minutes of your time to complete the questionnaire.

This questionnaire consists of three parts. The first section asks for your demographical details. The second section asks for your opinion on a statement. The third part is reserved for your feedback.

The results of the study may be published in an academic journal. We will provide you with a summary of our findings on request (please supply your e-mail address on the last page for this, or send us a separate e-mail if you wish to remain anonymous).

Please contact one of the researchers directly if you have any questions or comments regarding the study:

- ✍ Professor Leo Vermeulen ([lvermeul@tiscali.co.za](mailto:lvermeul@tiscali.co.za)). (Supervisor).
- ✍ Professor Pieter Schaap ([pieter.schaap@up.ac.za](mailto:pieter.schaap@up.ac.za)). (Co-supervisor).
- ✍ Preven Naidoo ([freudian@telkomsa.net](mailto:freudian@telkomsa.net)), 083 620 7299. (Research student).

Please indicate that you have read the information provided above by putting an X in this box .

**Thank you for your time and participation**

**Yours sincerely**

**Professor Leo Vermeulen**

**Unit of Aviation Management**

**UNIVERSITY OF PRETORIA**



APPENDIX C  
- Three Scale Items -

### SCALE 1: ORGANISATIONAL PROFESSIONALISM

Training on this aircraft is well organised.
Training on this aircraft is professional.
My company's training produces world class pilots.
Training at my airline is in line with company goals.
The airline is very supportive of its pilots' learning requirements for this aircraft.
There is sufficient training guidance from the company.
Management follows the rules and regulations appropriately.
My company's culture supports training for new technology aircraft.
I understand what the company expects of me when training.
My company has talented people in training.
If I had to experience a problem in training, it's easy for me to appeal.
I know what my company's training goals are.
Training at my airline produces safe pilots.
There is sufficient feedback about my training on this aircraft.
My company uses only current training material.
Training is in line with civil aviation regulations.
The airline gives its pilots an appropriate amount of preparation work for training.
My instructor is willing to listen.
Pilots are in direct control of the training outcome.
I'm given sufficient time to prepare for training on this aircraft.

### SCALE 2: INTRINSIC MOTIVATION

It's a good idea to know more than what is required.
I try never to be late for a training session.
I co-operate when training in a simulator.
I aim to gain a deeper understanding of this aircraft.
Preparation improves performance.
I read to understand so as to gain a deeper understanding of this aircraft's systems.
I have a positive relationship with my colleagues.
I operate well as a crew member in the simulator.
I enjoy studying the technical aspects of the aircraft.

### SCALE 3: INDIVIDUAL CONTROL OF TRAINING OUTCOMES

I'm comfortable undergoing training for this aircraft.
I'm in control of the outcome of a training session.
I can control my anxiety so as to perform well in training.
The instructors on this aircraft don't overload us with information.



## APPENDIX D

- Informed consent form -

Informed consent for participation in an academic  
research study

Dept. of Human Resource Management

THE DEVELOPMENT OF A SCALE TO MEASURE PERCEPTIONS OF THE ADVANCED  
AUTOMATED AIRCRAFT TRAINING CLIMATE

Research conducted by:

P. Naidoo (21346039)

Cell: 083 620 7299

Dear Participant

You are invited to participate in an academic research study being conducted by Preven Naidoo (BCom AVM, BCom Hons BM, MPhil HRM, ATPL), a Doctoral student in Organisational Behaviour at the University of Pretoria's unit for Aviation Management. The purpose of the study is to develop a psychological measurement of airline pilots' perceptions of their training environment, specifically associated with advanced automated aircraft and its related systems.

Please note the following:

- This study involves an anonymous survey. Your name will not appear on the questionnaire and the answers you give will be treated as strictly confidential. You cannot be identified in person based on the answers you give. Note also that the study has been scrutinised and passed by the University's ethics committee.
- By completing the questionnaire and returning it, you are giving your consent to participate in the study on a voluntary basis. Furthermore, all data received by you will be used for academic purposes only and can only be accessed by the researchers.
- Your participation in this study is very important to us and future research for enhancing flight safety. You may however, choose not to participate.
- Please answer the questions found in the attached questionnaire as completely and honestly as possible. This should not take more than 20 minutes of your time.
- The results of the study will be used for academic purposes only and may be published in a scientific journal. We will provide you with a summary of our findings on request.
- Please contact me ([freudian@telkomsa.net](mailto:freudian@telkomsa.net)) or my supervisor, Professor Leo Vermeulen ([lvermeul@tiscali.co.za](mailto:lvermeul@tiscali.co.za)) if you have any questions, comments or additional information regarding the study.
  - Please indicate that you have read and understand the information provided above by ticking this box .
  -

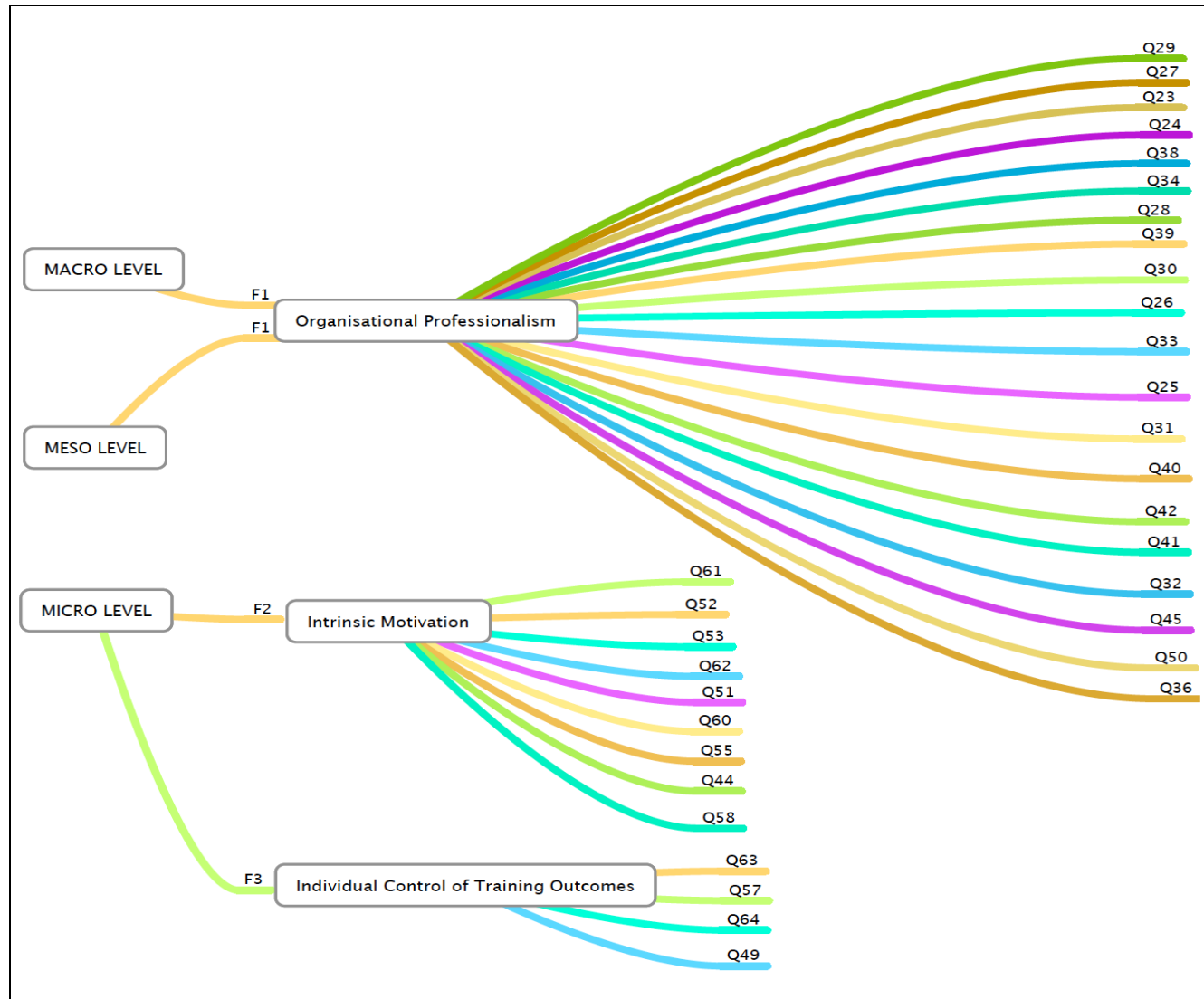
Kindest regards,

Professor Leo Vermeulen (Unit for Aviation Research, University of Pretoria).



## APPENDIX E

- Illustrated structure of the measurement construct -





## APPENDIX F

- Web based survey -



Note about the web-based version of the large-scale survey:

Because the web-based survey can accommodate items in specific format only, the survey items were adapted to fit such categories. Nonetheless, the essence and content of an item was not changed. Furthermore the survey software (Lime Survey) requires that, all surveys must have at least one group. Groups are used to 'group' questions/items together into logical categories. A group has a name and a description. Each item of the web survey was mandatory, thus an asterisk marking the item/question.

The following screen shots provide an illustration of the appearance of the actual web-based survey. The survey was accessed via an internet hyperlink.



### Advanced Aircraft Training Climate Questionnaire (AATC-Q)

The purpose of this study is to explore your perceptions and experiences regarding training to operate advanced automated aircraft.

The information obtained from this project will add to the current body of knowledge on human factors, automation, pilot training and flight safety. Your co-operation in completing the questionnaire will be a valuable input to the overall success of the study.

Dear Colleague:

You are invited to participate in an academic research study because of your experience and knowledge in the area of interest, namely advanced automated aircraft training. This study is being conducted by the unit of Organisational Behaviour at the University of Pretoria.

This study involves an anonymous survey which has been endorsed by the Airline Pilots' Association of South Africa (ALPA-SA). Your name will not appear on the questionnaire and the answers you give will be treated as strictly confidential. Furthermore, you cannot be identified from the answers that you give.

Any data you provide can only be accessed by the researchers at the University of Pretoria.

I thank you in advance for your kind participation.

Yours sincerely

Professor Leo Vermeulen

Research Student:

Preven. Naidoo.

(BCom, BCom Hons, MPhil)

University of Pretoria

Please feel free to email any comments or suggestions to:

[freudian@telkomsa.net](mailto:freudian@telkomsa.net)

*There are 66 questions in this survey.*

#### **A Note On Privacy**

This survey is anonymous.

The record kept of your survey responses does not contain any identifying information about you unless a specific question in the survey has asked for this. If you have responded to a survey that used an identifying token to allow you to access the survey, you can rest assured that the identifying token is not kept with your responses. It is managed in a separate database, and will only be updated to indicate that you have (or haven't) completed this survey. There is no way of matching identification tokens with survey responses in this survey.



Advanced Aircraft Training Climate Questionnaire (AATC-Q)

The purpose of this study is to explore your perceptions and experiences regarding training to operate advanced automated aircraft.

The information obtained from this project will add to the current body of knowledge on human factors, automation, pilot training and flight safety. Your co-operation in completing the questionnaire will be a valuable input to the overall success of the study.

0%  100%

**SECTION A: Demographical information**

Please answer the following questions to reflect the information that best represents you. This information is important in order to compile an accurate description of the sample.

**\*What is your age (years)?**

Only numbers may be entered in this field

**\*Gender?**

- Female  
 Male

**\* What are your academic qualifications? Please also specify your field of study in the space provided where applicable.**

Check any that apply

- Secondary School
- Diploma
- Bachelor's Degree
- Honours Degree
- Master's Degree
- Doctorate

**\*Indicate your total level of experience as a pilot (years):**

Only numbers may be entered in this field

**\*Indicate your total flying time (hours):**

Only numbers may be entered in this field

**\*Indicate your total flying time in modern digital ("glass") flight decks (hours):**

Only numbers may be entered in this field



\*

Which of the following categories best describes your primary status and/or function at your current company?

Choose one of the following answers

- Dedicated In-Flight Relief Pilot
- Co-Pilot (Short Range/domestic/regional)
- Co-Pilot (Long Range)
- Co-Pilot and instructor (Short Range/domestic/regional)
- Co-Pilot and instructor (Long Range)
- Captain (Short Range/domestic/regional)
- Captain (Long Range)
- Training Captain (Short Range/domestic/regional)
- Training Captain (Long Range)
- Other

\*How would you rate your current level of computer literacy?

Choose one of the following answers

- Poor
- Average
- Above average
- Excellent

\*Please indicate where you received initial (*ab initio*) flying training

Choose one of the following answers

- Military
- Cadet
- Self-sponsored (part-time)
- Self-sponsored (full-time)
- Other

\*

Please indicate the current company you work for.

Choose one of the following answers

- SAA
- BA Comair
- SAX
- SA Airlink
- Mango
- 1Time
- Other

\*Please list the various aircraft types (multi-engine turbine/jet) which you have flown in your career, to date. Example: B732, B738, A319, Jetstream 41, Dash-8, etc.



**\*Indicate the aircraft manufacturer type you currently operate.**

Choose one of the following answers

- Boeing
- Airbus
- Embraer
- Canadair
- De Havilland
- Other

**\*Do you have (or have held) a flight instructor's rating, and if so, what grade?**

Choose one of the following answers

- No Instructor Rating
- Grade 1
- Grade 2
- Grade 3

**\*Have you completed a full crew resource management (CRM) course?**

- Yes
- No

**\*What method of ground school study do you prefer ?**

Choose one of the following answers

- Computer Based Training (CBT)
- Classroom Lectures

**Do you enjoy route training on your current aircraft?**

Choose one of the following answers

- Never
- Sometimes
- Always

**\*Do you enjoy simulator training on your current aircraft?**

Choose one of the following answers

- Never
- Sometimes
- Always

**\*How often do you undergo recurrent simulator training for your present aircraft?**

Choose one of the following answers

- No recurrent
- Once a year
- Twice a year
- More than twice a year

**\*How long prior to recurrent training do you begin preparation?**

Choose one of the following answers

- Don't prepare
- Less than 2 weeks
- 2 to 4 weeks
- 4 weeks +
- N/A



\*How often do you undergo route check flights for your present aircraft?

Choose one of the following answers

- Never
- Once a year
- Twice a year
- More than twice a year

\*

Does your company own the flight simulator device for your current aircraft type?

Choose one of the following answers

- Yes
- No

\*

In your opinion, is the flight simulator training device for your current aircraft type an accurate representation of the real aircraft?

Choose one of the following answers

- Yes
- No
- Can't decide

[Resume Later](#)

[<< Previous](#)

[Next >>](#)

[\[Exit and Clear Survey\]](#)

Advanced Aircraft Training Climate Questionnaire (AATC-Q)

The purpose of this study is to explore your perceptions and experiences regarding training to operate advanced automated aircraft.

The information obtained from this project will add to the current body of knowledge on human factors, automation, pilot training and flight safety. Your co-operation in completing the questionnaire will be a valuable input to the overall success of the study.

0%  100%

**SECTION B: Survey statements**

The questionnaire contains statements relating to your most recent experience in training for an advanced or “glass-cockpit” type aircraft, for example: Airbus 340, Boeing 738, ERJ, CRJ, Dash-8, etc.

There are no correct or incorrect answers.

Please consider each item individually based on your experience. It is your candid, honest view which is of importance. Often, the first answer that comes to mind is the best. Remember to answer what is true to you. Do not merely mark what you may assume to be a more acceptable way of responding.

PLEASE RATE YOUR SELECTION ON A 7-POINT SCALE, WHERE 1 IMPLIES THAT YOU STRONGLY **DISAGREE** WITH THE STATEMENT, AND 7 IMPLIES THAT YOU STRONGLY **AGREE** WITH THE STATEMENT. IF YOU ARE UNSURE, NEUTRAL OR HAVE NO OPINION ON THE STATEMENT, PLEASE MARK THE MIDDLE POINT, NUMBER 4. HOWEVER, PLEASE USE THIS NUMBER (4) AS SELDOM AS POSSIBLE.

Thank you in advance for your kind participation.

<b>*My company's training produces world class pilots.</b>	Strongly disagree	Moderately disagree	Slightly disagree	Neither agree or disagree	Slightly agree	Moderately agree	Strongly agree
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>*Training at my airline is in line with company goals.</b>	Strongly disagree	Moderately disagree	Slightly disagree	Neither agree or disagree	Slightly agree	Moderately agree	Strongly agree
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>*I know what my company's training goals are.</b>	Strongly disagree	Moderately disagree	Slightly disagree	Neither agree or disagree	Slightly agree	Moderately agree	Strongly agree
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>*My company has talented people in training.</b>	Strongly disagree	Moderately disagree	Slightly disagree	Neither agree or disagree	Slightly agree	Moderately agree	Strongly agree
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>*Training on this aircraft is professional.</b>	Strongly disagree	Moderately disagree	Slightly disagree	Neither agree or disagree	Slightly agree	Moderately agree	Strongly agree
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>*Management follows the rules and regulations appropriately.</b>	Strongly disagree	Moderately disagree	Slightly disagree	Neither agree or disagree	Slightly agree	Moderately agree	Strongly agree
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>*Training on this aircraft is well organised.</b>	Strongly disagree	Moderately disagree	Slightly disagree	Neither agree or disagree	Slightly agree	Moderately agree	Strongly agree
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



<b>*I understand what the company expects of me when training.</b>							
	Strongly disagree	Moderately disagree	Slightly disagree	Neither agree or disagree	Slightly agree	Moderately agree	Strongly agree
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>*Training at my airline produces safe pilots.</b>							
	Strongly disagree	Moderately disagree	Slightly disagree	Neither agree or disagree	Slightly agree	Moderately agree	Strongly agree
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>*The airline gives its pilots an appropriate amount of preparation work for training.</b>							
	Strongly disagree	Moderately disagree	Slightly disagree	Neither agree or disagree	Slightly agree	Moderately agree	Strongly agree
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>*If I had to experience a problem in training, it's easy for me to appeal.</b>							
	Strongly disagree	Moderately disagree	Slightly disagree	Neither agree or disagree	Slightly agree	Moderately agree	Strongly agree
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>*There is sufficient training guidance from the company.</b>							
	Strongly disagree	Moderately disagree	Slightly disagree	Neither agree or disagree	Slightly agree	Moderately agree	Strongly agree
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>*The standard operating procedures (SOPs) for learning to fly this aircraft is adequate.</b>							
	Strongly disagree	Moderately disagree	Slightly disagree	Neither agree or disagree	Slightly agree	Moderately agree	Strongly agree
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>*I'm given sufficient time to prepare for training on this aircraft.</b>							
	Strongly disagree	Moderately disagree	Slightly disagree	Neither agree or disagree	Slightly agree	Moderately agree	Strongly agree
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

<b>*The simulators my company trains its pilots in are in good condition.</b>							
	Strongly disagree	Moderately disagree	Slightly disagree	Neither agree or disagree	Slightly agree	Moderately agree	Strongly agree
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>*The airline is very supportive of its pilots' learning requirements for this aircraft.</b>							
	Strongly disagree	Moderately disagree	Slightly disagree	Neither agree or disagree	Slightly agree	Moderately agree	Strongly agree
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>*My company's culture supports training for new technology aircraft.</b>							
	Strongly disagree	Moderately disagree	Slightly disagree	Neither agree or disagree	Slightly agree	Moderately agree	Strongly agree
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>*There is sufficient feedback about my training on this aircraft.</b>							
	Strongly disagree	Moderately disagree	Slightly disagree	Neither agree or disagree	Slightly agree	Moderately agree	Strongly agree
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>*Training is in line with civil aviation regulations.</b>							
	Strongly disagree	Moderately disagree	Slightly disagree	Neither agree or disagree	Slightly agree	Moderately agree	Strongly agree
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>*My company uses only current training material.</b>							
	Strongly Disagree	Slightly Disagree	Disagree	Neither Disagree, nor Agree	Agree	Slightly Agree	Strongly Agree
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>*I learn better when I work as a member of the crew.</b>							
	Strongly disagree	Moderately disagree	Slightly disagree	Neither agree or disagree	Slightly agree	Moderately agree	Strongly agree
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>





<b>* I operate well as a crew member in the simulator.</b>							
Strongly disagree	Moderately disagree	Slightly disagree	Neither agree or disagree	Slightly agree	Moderately agree	Strongly agree	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>* My instructor is willing to listen.</b>							
Strongly disagree	Moderately disagree	Slightly disagree	Neither agree or disagree	Slightly agree	Moderately agree	Strongly agree	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>* I tend to communicate well with my simulator partner.</b>							
Strongly disagree	Moderately disagree	Slightly disagree	Neither agree or disagree	Slightly agree	Moderately agree	Strongly agree	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>* The instructor is committed.</b>							
Strongly disagree	Moderately disagree	Slightly disagree	Neither agree or disagree	Slightly agree	Moderately agree	Strongly agree	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>* Instructors are very similar in how they teach pilots to fly this aircraft.</b>							
Strongly disagree	Moderately disagree	Slightly disagree	Neither agree or disagree	Slightly agree	Moderately agree	Strongly agree	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>* The instructors on this aircraft don't overload us with information.</b>							
Strongly disagree	Moderately disagree	Slightly disagree	Neither agree or disagree	Slightly agree	Moderately agree	Strongly agree	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>* Pilots are in direct control of the training outcome.</b>							
Strongly disagree	Moderately disagree	Slightly disagree	Neither agree or disagree	Slightly agree	Moderately agree	Strongly agree	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

<b>* Preparation improves performance.</b>							
Strongly disagree	Moderately disagree	Slightly disagree	Neither agree or disagree	Slightly agree	Moderately agree	Strongly agree	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>* I try never to be late for a training session.</b>							
Strongly disagree	Moderately disagree	Slightly disagree	Neither agree or disagree	Slightly agree	Moderately agree	Strongly agree	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>* I co-operate when training in a simulator.</b>							
Strongly disagree	Moderately disagree	Slightly disagree	Neither agree or disagree	Slightly agree	Moderately agree	Strongly agree	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>* After training I feel a sense of mastery.</b>							
Strongly disagree	Moderately disagree	Slightly disagree	Neither agree or disagree	Slightly agree	Moderately agree	Strongly agree	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>* I have a positive relationship with my colleagues.</b>							
Strongly disagree	Moderately disagree	Slightly disagree	Neither agree or disagree	Slightly agree	Moderately agree	Strongly agree	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>* Pilots who come prepared have no problems training for this aircraft.</b>							
Strongly disagree	Moderately disagree	Slightly disagree	Neither agree or disagree	Slightly agree	Moderately agree	Strongly agree	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>* I'm in control of the outcome of a training session.</b>							
Strongly disagree	Moderately disagree	Slightly disagree	Neither agree or disagree	Slightly agree	Moderately agree	Strongly agree	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



<b>*I enjoy studying the technical aspects of the aircraft.</b>	Strongly disagree	Moderately disagree	Slightly disagree	Neither agree or disagree	Slightly agree	Moderately agree	Strongly agree
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>*I reflect on my learning experience after a simulator session.</b>	Strongly disagree	Moderately disagree	Slightly disagree	Neither agree or disagree	Slightly agree	Moderately agree	Strongly agree
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>*I read to understand so as to gain a deeper understanding of this aircraft's systems.</b>	Strongly disagree	Moderately disagree	Slightly disagree	Neither agree or disagree	Slightly agree	Moderately agree	Strongly agree
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>*It's a good idea to know more than what is required.</b>	Strongly disagree	Moderately disagree	Slightly disagree	Neither agree or disagree	Slightly agree	Moderately agree	Strongly agree
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>*I aim to gain a deeper understanding of this aircraft.</b>	Strongly disagree	Moderately disagree	Slightly disagree	Neither agree or disagree	Slightly agree	Moderately agree	Strongly agree
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>*I'm comfortable undergoing training for this aircraft.</b>	Strongly disagree	Moderately disagree	Slightly disagree	Neither agree or disagree	Slightly agree	Moderately agree	Strongly agree
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>*I can control my anxiety so as to perform well in training.</b>	Strongly disagree	Moderately disagree	Slightly disagree	Neither agree or disagree	Slightly agree	Moderately agree	Strongly agree
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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Advanced Aircraft Training Climate Questionnaire (AATC-Q)

**The purpose of this study is to explore your perceptions and experiences regarding training to operate advanced automated aircraft.**

The information obtained from this project will add to the current body of knowledge on human factors, automation, pilot training and flight safety. Your co-operation in completing the questionnaire will be a valuable input to the overall success of the study.

0% 100%

**SECTION C: Feedback**

**Please include any comment(s) you may have regarding training in an advanced aircraft, either positive or negative.**

**Please provide us with your email address if you would like to receive feedback.**

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