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## Understanding the Airport Passenger Landside Retail Experience

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### ***Abstract***

*The landside environment of an airport terminal is an important area for both passengers and the airport as it is the first area passengers enter and experience, influencing passengers' overall airport experiences. This paper focuses on landside passenger experiences and factors which influence the quality of these experiences. Data collection occurred through video recorded observations of 40 passengers' airport experiences at two Australian international departure terminals. The Observer software was used to code and analyse data.*

*Indicative results show that passengers spend over half of their landside dwell time undertaking processing activities. The results highlight the important influencing role passengers' companions have over the proportion of landside dwell time passengers spend undertaking discretionary activities.*

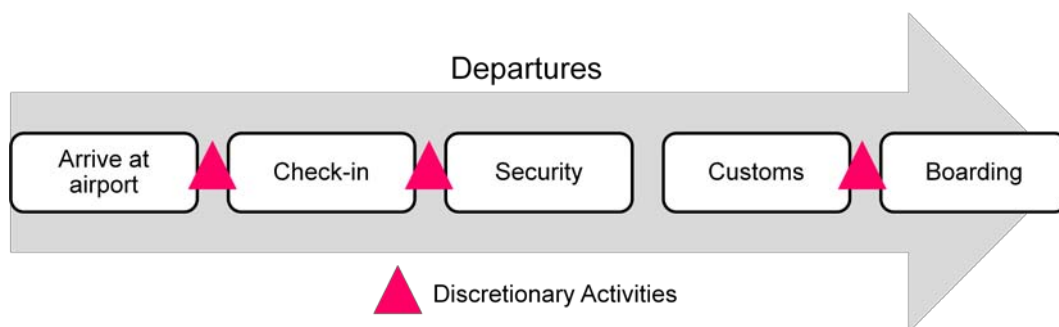
*The findings provide an understanding of passenger landside experiences and how they can be improved. The significance of these findings lies in their potential application to landside airport terminal design with specific examples outlined. This new knowledge will assist in improving passenger airport experiences through informing future airport planning and design of landside spaces and retail environments.*

***Keywords: airport passenger experiences, discretionary time, retail environment, design***

## Introduction

Airports are one of the largest and most complex systems within modern society, bringing together people, processes, technologies, government agencies, private companies, spaces, artefacts and information (Popovic, Kraal & Kirk, 2009). Current airport design focuses on bringing together these individual factors in what is thought to be the most efficient manner. However, this approach to airport design does not take into account the full range of experiences, activities and interactions undertaken by passengers throughout the airport terminal. The complexity of processes involved within the airport terminal can often lead to airports being confusing, uncomfortable and stressful environments for their main users (Underhill, 2008).

In airports, passengers undertake two separate categories of activities: processing and discretionary. Processing activities include any activity a passenger needs to complete to provide them with the permission to board their flight. Within Australian international airport terminals there are four domains where passengers undertake processing activities: (i) Check-in, (ii) Security, (iii) Customs and (iv) Boarding (Figure 1). Processing activities are often considered as the main activity type passengers undertake whilst within the terminal. However, Popovic, Kraal and Kirk (2009) have identified that a significant part of a passenger's experience within an airport terminal is dedicated to in-between or discretionary time. Discretionary activities include all activities undertaken by passengers during non-processing times (Popovic et al., 2009) and can be considered as enforced leisure time (Rowley & Slack, 1999). Preliminary results from Kirk's (2010) research indicates that passengers spend on average 20% of their overall airport dwell time undertaking processing activities and 80% undertaking discretionary activities.



**Figure 1 Australian Airport Departure Processing Domains**

Periods immediately before and during the completion of processing activities have been highlighted as time periods in which passengers experience elevated levels of negative emotions, including stress and anxiety (Scholvink, 2000; Thomas, 1997). However once passengers complete processing activities and enter into discretionary time, these

negative emotions give way to positive travel emotions of excitement and anticipation (Thomas, 1997). The retail environment is one area in which passengers may choose to spend their discretionary time and is an important area which can be used to mitigate passengers' travel related stress (Rowley & Slack, 1999).

Over the past three decades the financial importance of the retail environment in the airport industry has significantly increased as the percentage of revenue generated through aeronautical activities has decreased (Freathy & O'Connell, 1998). Increases in the financial importance of airport retail environments have seen an explosion in the number and type of retailers operating within airport terminals (Rowley & Slack, 1999). This rapid expansion in airport retail has resulted in considerable increases in the variety of retail experiences available to passengers.

Australian international departure airport terminals are broken into two distinct halves, landside and airside. The landside of an international airport terminal includes the first portion of the terminal from entry until the Liquids Aerosols and Gases (LAGs) security check point; both passengers and non-passengers are allowed within this space. The airside of the airport terminal is the sterile area beginning from the LAGs security check point until the boarding check point which leads to the tarmac; only ticket holding passengers are allowed within this section.

This paper will focus on the retail experiences (Dewey, 2005) of passengers whilst on the landside of the airport terminal. Landside is the first part of the airport terminal passengers enter with their experiences in this area influencing their overall airport experiences. The landside retail environment is important for airports as it provides both financial and experiential opportunities with passengers and non passengers. This paper will focus on describing what passengers do in landside retail environments. Passengers' companions and the retail environment are highlighted as important influences over the creation of quality passenger experiences.

## **Methodology**

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Observations of passengers' airport retail experiences were undertaken at the departure terminals of two Australian international airports: Airport A and Airport B. Passengers using airline frequent-flyer lounges were not included. Data collected focussed on passengers overall airport retail experience on both the landside and airside of the airport terminal. Passenger recruitment and data collection methods differed slightly between these two locations.

Participation at Airport A was sought in advance through advertising within the city's central business district, social media and word of mouth. This method of recruitment was used as the researcher was not faced with any significant time pressures to recruit participants and complete observations. Participation at Airport B, however, was sought at the international terminal on the day of the passenger's travel by approaching passengers as they entered the terminal. This method of recruitment was used as the researcher was restricted to a one week time frame for data collection. Once passenger's participation was confirmed at both locations details about their destination, departure time, airline and flight number were requested and passengers were asked to sign consent forms.

On the day of travel, for Airport A, observations began once the passenger entered the terminal building. For Airport B however, observations began once the passenger was recruited within the terminal building, usually just before the passenger began their check-in process. During the observations the researcher attempted to maintain a distance of approximately ten to fifteen meters. However, this distance was reduced approximately to between two to five meters whilst participants were within certain airport retail locations, allowing the researcher to maintain line of sight. Participants were observed throughout the entire terminal building with recording stopping once the participant was processed through boarding and had entered the walk-way to the plane.

No video footage was recorded whilst participants were in the Customs domain due to customs enforced restrictions. During this domain the researcher ensured that the camera lens was obscured, verbally noting the activities participants undertook so as to ensure real-time time data was collected. If participants were travelling with others (travel companions and wavers), the researcher followed the participant and recorded their companions only when they were with the participant.

Video footage was coded in Noldus Observer (Noldus, 2008). A coding scheme was then developed to capture the full range of activities and interactions performed by participants and the locations they entered. The coding scheme is shown in Table 1. Coding was completed over a six month period, with coding at this stage only being completed by one researcher.

**Table 1 Coding scheme**

<i>Category</i>	<i>Explanation</i>	<i>Example Codes</i>	<i>Observer Code</i>
Macro Level Experience	At all times within the airport terminal a participant will be engaged in one of these two activities	- Processing - Discretionary	- PRO - DES
Non-Retail Locations	All non retail locations within the airport terminal	- Airside area - Landside area - Check-in	- AIR/air - LAN/lan - CHE/che
Landside Retail Locations	All retail locations on the landside of each specific airport terminal	- News Travels - Australia Way - Merlo	- LNT/int - LAW/law - LME/lme
Airside Retail locations	All retail locations on the airside of each specific airport terminal	- Duty Free - Internet Kiosk - Travelex etc	- ADF/adf - AIK/aik - ATR/atr
Activity	All of the activities observed to be undertaken by the participant whilst within airport retail locations	- Walking whilst browsing - Seated - Waiting	- WWB/wwb - SEA/sea - WAI/wai
Payment Method	Method of payment used by participant when a purchase is made	- Cash - Card	- CAS - CAR
Purchase Type	Type of product purchased by participant	- Book - Alcohol - Electronic	- BOO - ALC - ELE
Interaction with Purchase	Type of interaction undertaken by participant with purchase within the airport terminal	- Consuming - Using - Removing packaging	- CON/con - USI/usi - REP/rep

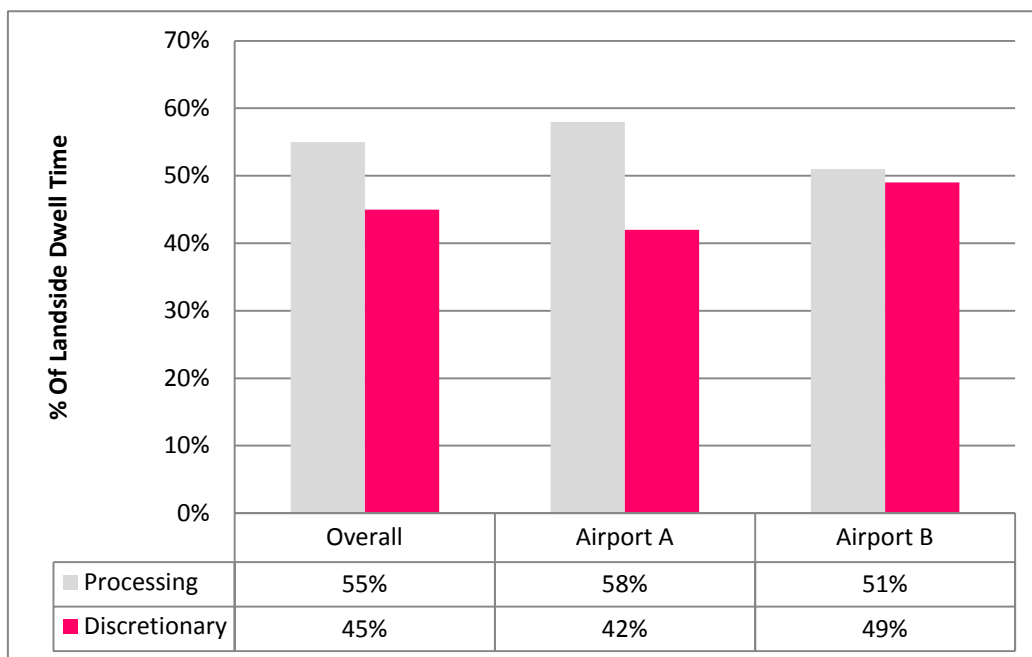
## Results

The following section outlines the indicative results gathered from the 40 passengers' observed landside retail experiences. Results presented in this section include a breakdown of how the observed passengers spent their landside dwell time including percentage of time spent in discretionary and processing, retail locations entered, retail purchases made and how these factors affected the amount of time passengers spent on the landside of the airport terminal.

### Landside dwell time

On average passengers were observed to spend 40min and 14sec on the landside of the airport terminal. Landside dwell time (total amount of time from entering the terminal until leaving landside) varied between 2hrs 5min 19sec and 3min 15sec. Passengers spent an average of 32% of their overall airport dwell time (total amount of time from entering the terminal until boarding) on the landside of the airport terminal. Airport A passengers spent 34% of their overall dwell time on the landside of the airport terminal, while Airport B passengers spent 30%.

Passengers' landside dwell time is categorised as either processing or discretionary time. Processing time is as any time a passenger is involved in an activity which is needed to be completed to enable the passenger to board their flight. Processing activities on the landside of the airport terminal include the completion of check-in and oversized baggage. Discretionary time is defined as any time a passenger spends undertaking an activity which is not considered processing. Passengers were observed to spend on average 55% of their landside dwell time undertaking processing activities and 45% undertaking discretionary activities (Figure 2). Airport A passengers' processing time was slightly longer.

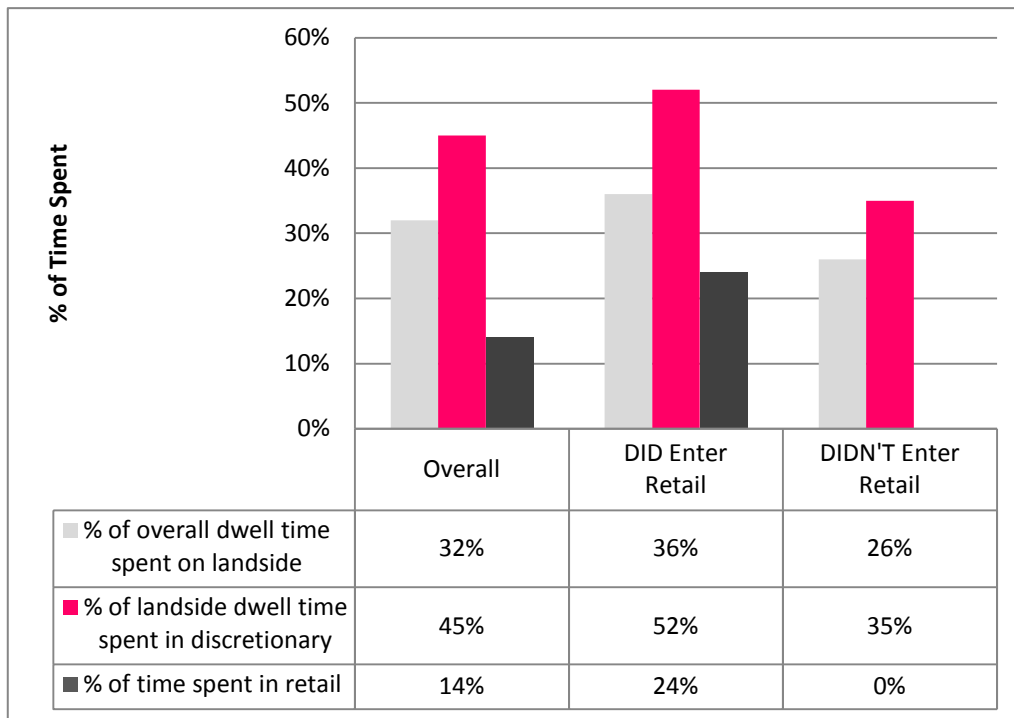


**Figure 2 Passenger's Average Percentage of Landside Dwell time spent in Processing and Discretionary**

### Retail Dwell Time

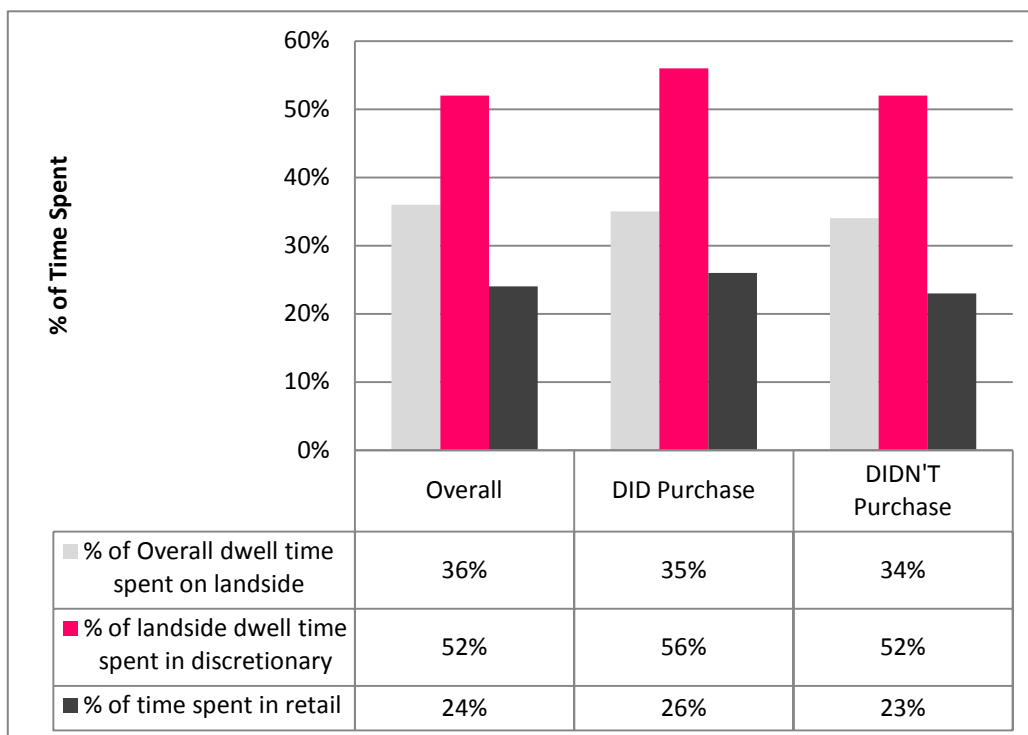
Figure 2 shows that a large proportion of the observed passengers' landside dwell time was spent completing discretionary activities. On average the 40 passengers spent 14% of their landside dwell time in retail locations. 24 of the total 40 were observed to enter retail locations, spending 24% of their landside dwell time in retail. Passengers who

entered retail locations also spent a larger percentage of their overall airport dwell time on landside and a larger percentage of their landside dwell time undertaking discretionary activities (Figure 3).



**Figure 3 Passenger Landside Vs Retail Dwell Time**

Of the 24 passengers who entered retail locations, 13 made a purchase with their average retail spend equaling approximately \$19. Passengers who made a retail purchase were observed to spend a larger proportion of their landside dwell time in retail locations (Figure 4).

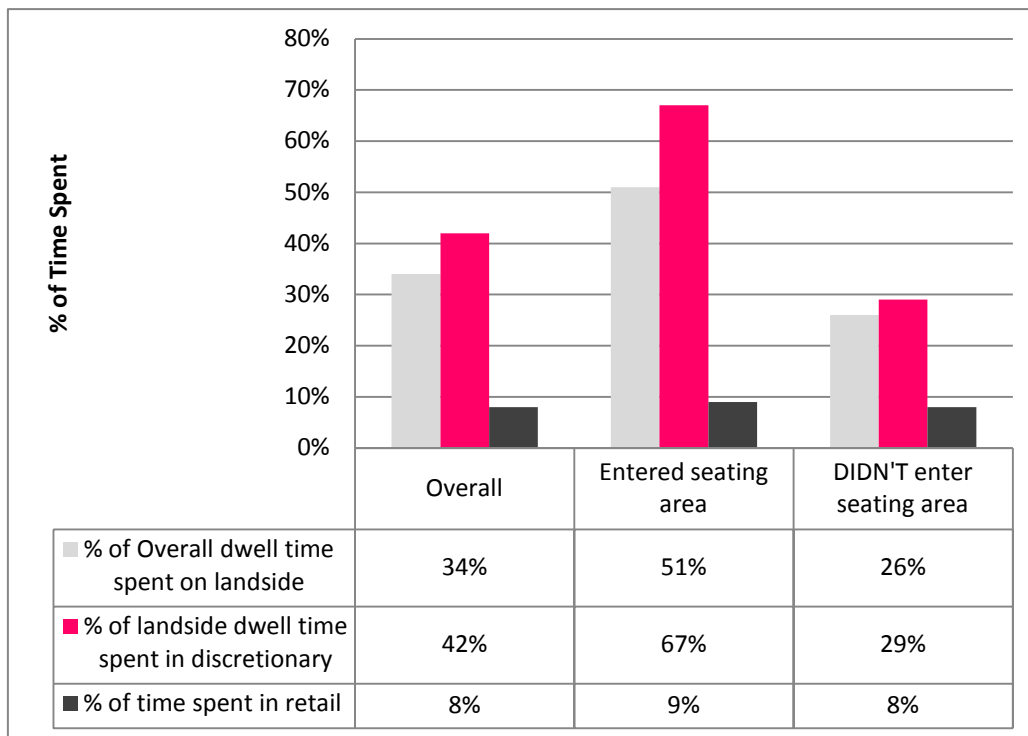


**Figure 4 Passenger Landside Dwell Time Vs Retail Purchase**



Airport A passengers spent a smaller proportion of their landside dwell time in retail locations (Figure 2). In Airport A, passengers most frequently entered the Newsagency category, made the most purchases within the Food and Beverage category and spent the largest percentage of time in the Service category. Passengers were also observed to spend a proportion of their landside dwell time in a retail related seating area. For the purpose of this research a retail related area is defined as a space in which passengers can undertake retail activities but cannot make a retail purchase, for example a food court seating area.

The landside retail environment at Airport A is designed around a central food court seating area. Passengers are encouraged to use this area after purchasing food and beverage products or as an area to socialise in. Passengers spent on average 14% of their landside dwell time in this seating area. Six Airport A passengers were observed to enter this seating area, with these passengers spending on average 44% of their landside dwell time in this location. Passengers who entered the central seating area spent a larger amount of time on landside and a larger proportion of their landside dwell time undertaking discretionary activities (Figure 5).

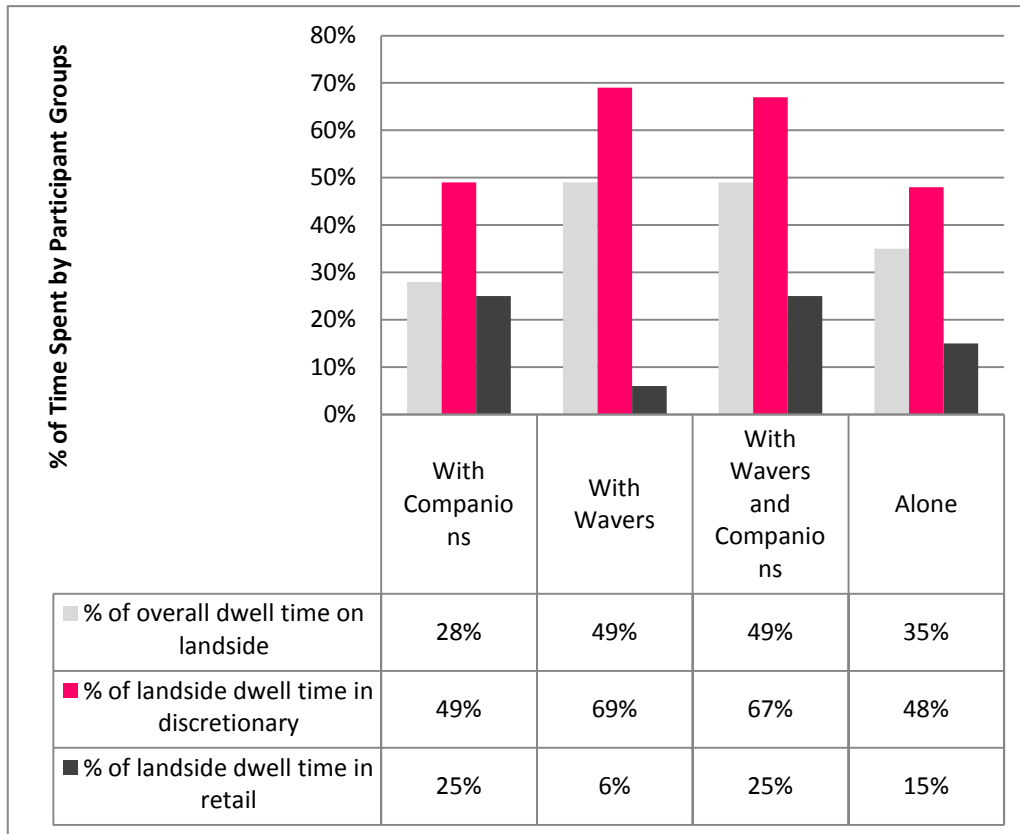


**Figure 5 Airport A Passenger Landside Dwell Time Vs Retail Purchase**

Airport B passengers spent a larger proportion of their landside time in retail locations (Figure 2). Airport B passengers most frequently entered the Souvenir category, made the most purchases in the Newsagency category and spent the largest percentage of time in the Food & Beverage category.

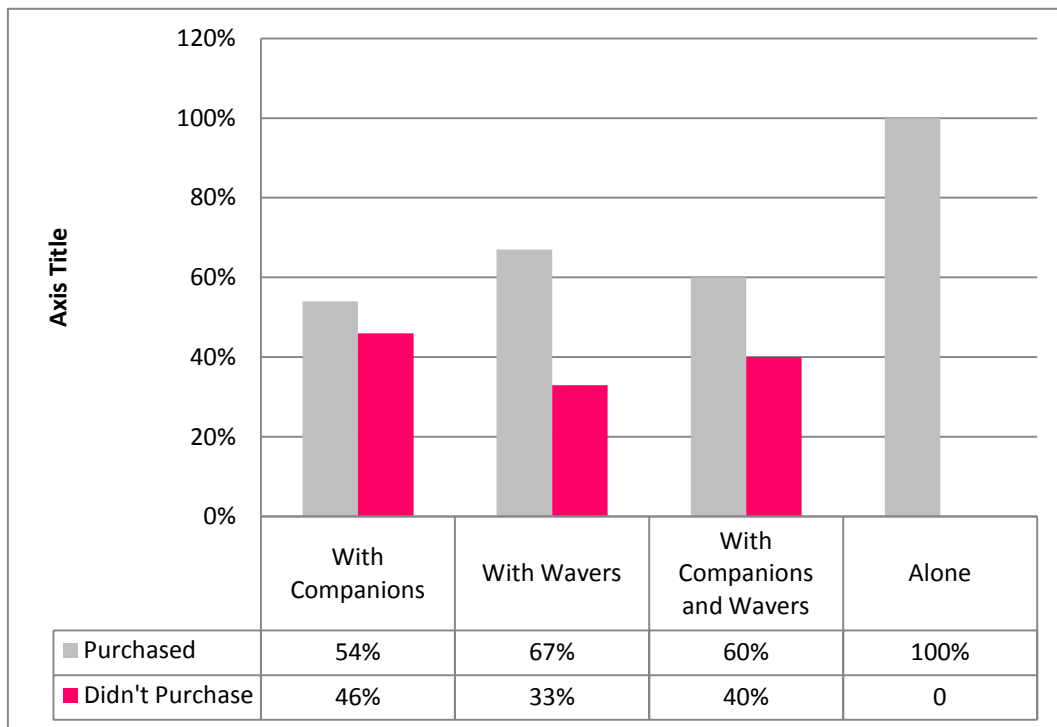
### Travel Companions and Wavers Vs Spend and Time

Passengers were accompanied by either travel companions (accompanying them on their flight) or wavers (not accompanying them on their flight). The 24 passengers who entered retail locations were classified into four groups: (i) with companions, (ii) with wavers, (iii) with companions and wavers, and (iv) traveling alone. Figure 6 illustrates the average percentage of landside dwell time, landside discretionary time and retail time spent by these four groups.



**Figure 6 Passenger Groups Landside Dwell Time**

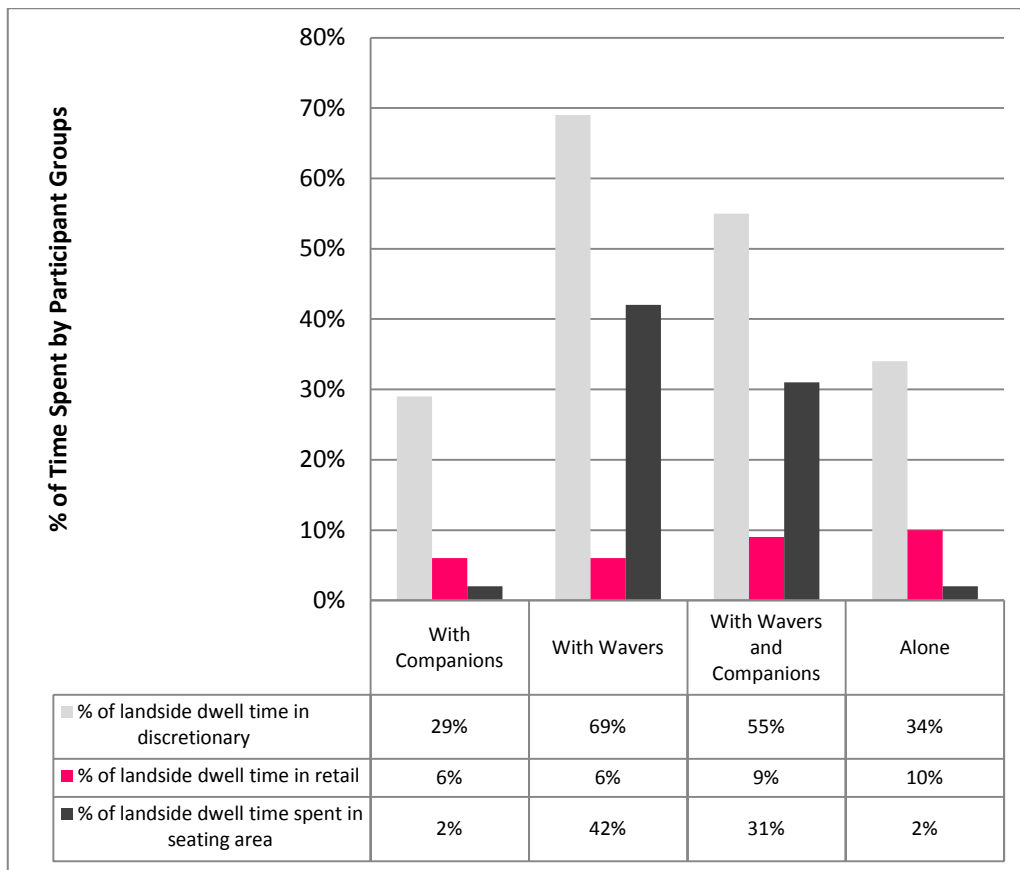
Figure 6 shows that the two groups of passengers accompanied by wavers (groups ii and iii) spent the largest average percentage of overall dwell time on landside and undertaking discretionary activities. The two groups accompanied by companions (groups i and iii) spent the largest average percentage of landside dwell time in retail locations. Passengers accompanied by just wavers were observed to spend the least amount of landside time in retail locations.



**Figure 7 Passenger Groups Who Made Landside Retail Purchases**

Figure 7 illustrates which of the four groups of passengers made retail purchases. All of the passengers traveling alone who entered retail locations were observed to make a purchase. Passengers with travel companions and wavers were more likely to browse retail outlets without purchasing.

The majority of passengers accompanied by wavers were observed at Airport A. Airport A passenger groups accompanied by wavers spent significantly larger proportions of their landside dwell time in the central seating area, a retail related area, than those who were not accompanied by wavers (Figure 8).



**Figure 8 Airport A Passenger Groups' Landside Dwell Time**

## Discussion

Passengers spent a smaller proportion of their overall airport dwell time on landside than airside. On average passengers spent approximately 40 minutes on landside. Passengers spent just over half of this landside dwell time undertaking processing activities, at 55%. Processing time is generally characterised as a stressful and anxious period for passengers, particularly just before and during the completion of check-in (Lamcraft, 1998; Rowley & Slack, 1999; Thomas, 1997). However, once passengers complete check-in and receive their boarding pass negative emotions give way to positive travel related emotions of anticipation and excitement (Thomas, 1997). This means that during discretionary times after check-in, passengers are more likely to experience positive emotions. The more discretionary time a passenger spends after check-in the more positive their landside experience is likely to be.

Creating positive passenger experiences in airports is of particular importance as airport terminals are increasingly being recognised as the locations where travellers make their first and last impressions of a city or country (Yeh & Kuo, 2003). The creation of positive passenger experiences can be used as a tool to increase return visits of passengers and non-passengers. Passenger experiences are also gaining importance as the quality of a passenger's experience is increasingly being used to

rate the quality of the terminal itself (Caves & Pickard, 2001). To be able to create quality landside passenger experiences airports should ensure passengers spend less time undertaking processing activities and encourage them to spend more time undertaking discretionary activities.

The results outlined in this paper highlight three factors which positively influence the proportion of landside dwell time passengers spend undertaking discretionary activities; whether or not they (i) entered a retail location, (ii) made a purchase and (iii) who they were accompanied by. Passengers who entered retail locations on average spent longer on landside and a larger proportion of landside time undertaking discretionary activities than those passengers who did not. Passengers who entered retail locations spent 55% of their landside dwell time undertaking discretionary activities, as opposed to those who did not enter retail who spent 35% of their landside dwell time undertaking discretionary activities. Airport A passengers who entered the retail related seating area provided were also observed to spend a larger proportion of landside dwell time undertaking discretionary activities. These results show that the landside retail environment and retail related areas are important areas which when entered influence the proportion of passenger discretionary time spent and in turn the quality of passengers' landside experiences.

For those passengers who were observed to enter into a retail location, whether or not they made a purchase also impacted on the proportion of landside dwell time they spent undertaking discretionary activities. Passengers who made a purchase spent on average 56% of their landside dwell time in discretionary, 4% more than those passengers who did not purchase. These results show that making a retail purchase positively influenced the amount landside dwell time passengers spent undertaking discretionary activities and therefore the quality of their landside experiences.

The final influence over passenger discretionary time which emerged from the research was who accompanied passengers. Passengers accompanied by wavers were observed to spend a significantly higher proportion of their landside dwell undertaking discretionary activities. Passengers with wavers, but not travelling companions, spent 69% of their landside dwell time undertaking discretionary activities while passengers with both wavers and travel companions spent 67%. Passengers accompanied by travel companions spent 49% and those travelling alone spent 48% of their landside time undertaking discretionary activities. This shows that wavers positively influence the proportion of landside dwell time passengers spend undertaking discretionary activities and the quality of their landside experience.

Passengers travelling with wavers were also more likely to make a retail purchase than those travelling only with companions. Of the 24 passengers who entered retail locations, 67% of those accompanied by only wavers and 60% accompanied by both wavers and travel companions were observed to make a retail purchase. However, only 54% of passengers accompanied by just travel companions were observed to make a purchase. These results show that wavers positively influenced whether or not passengers made a retail purchase. With passengers who made retail purchases observed to spend a larger proportion of landside dwell time undertaking discretionary activities, wavers are again seen to positively influence the quality of passengers' landside experiences.

However, passengers accompanied by wavers spent a small proportion of their landside dwell time in retail locations, at only 6%. This small percentage of retail time can be explained by the fact that the majority of passengers observed with wavers were observed at Airport A (only one was observed at Airport B). Airport A's retail environment is designed around a central food court seating area with minimal cafe/restaurant style seating provided inside food and beverage outlets. Passengers are encouraged to spend time in this central retail related seating area consuming purchased food and beverage products and socialising with their travel companions and wavers. Figure 9 shows the landside Observer activity map of Airport A passenger 20 (P20), who was accompanied on landside by a single waver. This map shows P20 entering a food and beverage outlet (Subway) directly before spending a large proportion of landside dwell time in the retail related seating area. After consuming purchased food P20 is seen to move away from this area only to return twice more to spend discretionary time with her waver in this seating area.



**Figure 9 Airport A Passenger 20's Landside Observer Activity Map**

Although passengers accompanied by wavers spent a smaller proportion of time in retail locations, they were observed to spend a significant amount of discretionary time in the retail related seating area at Airport A. Airport A passengers accompanied by wavers spent 42% of their landside dwell time in this retail related seating area, with those accompanied by both wavers and travel companions spending 31%. Passengers accompanied by travel companions only and those travelling alone were both observed to spend considerably less time in the retail related seating

at 2%. These results show that the provision of a central relaxed seating area positively influenced the landside experiences of those Airport A passengers who were accompanied by wavers. A landside retail environment that encourages wavers and passengers to spend quality time in a relaxed and social environment could be an incentive for wavers to accompany their passengers into the airport terminal, therefore positively influencing the quality of passenger's landside airport experiences.

The results discussed in this section highlight the important influence wavers have over the quality of passengers' landside experiences. Figure 10 shows that passenger landside airport dwell time is directly influenced by who accompanies them and whether or not they enter the retail environment (as highlighted in pink). Wavers are highlighted as impacting upon passenger landside experiences by influencing the amount of discretionary time spent. Passengers' accompanied by wavers spend a larger proportion of their landside dwell time undertaking discretionary activities. Wavers are also shown to influence the landside locations passengers choose to spend their discretionary time, with passengers accompanied by wavers more likely to enter the retail environment and retail related areas. Figure 10 shows that entering the retail environment and retail related areas, as well as making a purchase, in turn influences the proportion of landside dwell time passengers spend undertaking discretionary activities. The retail environment is an important area in the creation of quality passenger landside experiences, with passengers often ranking the retail environment as the most positive part of their overall airport experience (In Myant & Abraham, 2009).

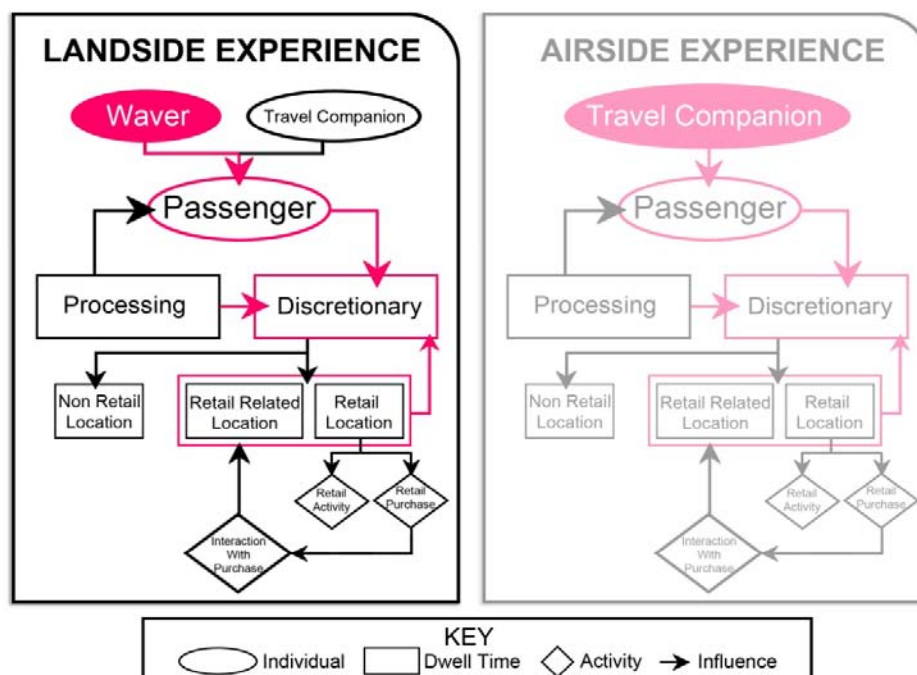


Figure 10 Passenger Airport Experience Model



This research is significant as it outlines the important influence wavers have over passengers' landside discretionary time and in turn their landside experiences. Wavers are only able to accompany passengers on the landside of the airport terminal, providing airports with a unique opportunity to facilitate how passengers spend their landside dwell time. Once airports understand the important role of wavers, they can begin to explore new design opportunities. These opportunities include the provision of a retail environment that focuses on the needs of both wavers and passengers, retail related spaces which promote prolonged social activities and addressing the disincentives associated with the cost of short term parking. Through the design of landside terminal environments and services which encourage wavers to enter into and spend time in airports, passenger discretionary time can be increased improving the quality of passenger landside experiences. A focus on passenger experiences can allow airports to increase passenger loyalty and spending (Berry, Carbone & Haeckel, 2002), with potential experiential benefits for passengers and financial benefits for airports.

### **Limitations of the Research**

The first limitation associated with this research is that the passengers who participated were aware of being video recorded throughout their airport experience. This knowledge may have led to some passengers altering their normal behaviour. However, to gain ethical approval for this research it was necessary to inform passengers about filming and obtain their consent before each observation was undertaken. This method of data collection allowed for passenger's full airport retail experience to be observed and recorded with thorough and detailed analysis completed at a later stage. Secondly, the relatively small number of participating passengers could be considered as a limitation of this research. However, the 40 passenger airport experiences which were observed added up to over 84hrs of video footage. This footage can be considered as over 84hrs worth of passenger airport activities, interactions and experiences instead of just 40 individual passenger observations. Thirdly the video footage took an average of two hours to code for every one hour recorded, with the coding process taking over 330hrs. Although this method is labour intensive and time consuming it provides a unique understanding of airport retail experiences from a passenger's perspective, which is missing from current research.

### **Conclusion**

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The indicative results outlined in this paper highlight the important influencing role wavers play on the quality of passenger landside experiences. The results show that passengers are more likely to spend a larger proportion of their landside dwell time undertaking discretionary



activities if they are accompanied by wavers. The presence of wavers was also shown to increase the amount of time passengers spent in the retail environment and retail related areas as well as whether or not they were observed to make a purchase. The length of time passengers spent in retail and retail related locations as well as making a purchase positively influenced the amount of landside dwell time they spent undertaking discretionary activities. Discretionary time is associated with passengers experiencing positive travel emotions of excitement and anticipation (Lamcraft, 1998; Rowley & Slack, 1999; Thomas, 1997). Positive passenger experiences are crucial to airports as the quality of a passenger's experience is increasingly being used to rate the quality of the terminal itself (Caves & Pickard, 2001).

These indicative findings provide an understanding of the influences over passenger landside experiences and how they can be improved. The significance of these findings lies in their potential application to landside airport terminal design. One specific application which has been highlighted is the positive impact that the provision of spaces and retail environments for wavers can provide. Landside terminals which are designed for the use of not only passengers but their wavers as well can improve passenger experiences. Landside terminal environments which encourage wavers to enter and spend time with their passengers can positively influence the amount of time passengers spend undertaking discretionary activities.

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## Author Bio

**Alison Livingstone** graduated from Queensland University of Technology in 2008 with a Bachelor of Design, majoring in Industrial Design (Hons). Alison is currently completing her PhD with the Airports of the Future project having received the Deputy Vice-Chancellor's Initiative Scholarship. Her PhD focuses on passenger experience in airport retail environments. Drawing on her Industrial Design background her research aims to understand and model the activities and interactions undertaken by passengers within airport retail environments. She also has experience working as a 3D graphic artist within the Architecture industry (Alison.livingston@qut.edu.au).

**Vesna Popovic** is a Professor in Industrial Design at Queensland University of Technology, Brisbane, Australia. She has made an international contribution to product design research where she has integrated knowledge from other related areas and applied to the artifact design (e.g. human factors/ergonomics, product usability, design and cognition, expertise and experience, design computing or applied design research) in order to support and construct design applications. She has successfully integrated the industrial (product) design research agenda with diverse disciplines such as medicine, science, engineering, humanities and information technologies in order to enhance or change their practices. In particular, she has been a founder of People and Systems Lab research at QUT. The impacts of Vesna's research lies in the cross-fertilisation of knowledge across humanities and technologies to design humanised artifacts/ systems by facilitating the understanding of diverse expertise and experience. Vesna is a Fellow of the Design Research Society (UK). She is recipient of three Australia Research Council grants (v.popovic@qut.edu.au).

**Ben Kraal** during the last six years he has made significant contributions to design research. Dr Kraal's approach adapts rich sociological techniques to investigate the complex interplay between people, the tools they use and the environment in which they work, allowing the identification of the essential elements of the work practice in question, making it clear where technology and design interventions are able to achieve the greatest positive impact. His ongoing research looks at how people use airports and how doctors and nurses collaborate with digital telehealth stethoscopes (b.kraal@qut.edu.au).

**Philip Kirk** completed his Bachelor (Hons) degree in Behavioural Biology at the University of St. Andrews, UK, in 1999, and also completed a higher certificate in Civil Engineering at Edinburgh's Telford College, UK, in 2004. Phil was previously a Senior Research Assistant for the Airports of the Future Project investigating Passenger Experience. He has also worked for the CRC for Construction Innovation (CRCCI) where he helped develop a tool to use on construction sites to measure Health and Safety techniques. He has worked on various animal behaviour projects around the world. Philip's PhD will research the experience of passengers at airports, to understand and model the various activities passengers undertake while at the airport (philip.kirk@qut.edu.au)