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**MODEL TEORITIK HUBUNGAN KARAKTERISTIK
KORIDOR JALAN DENGAN MINAT MASYARAKAT
UNTUK BERJALAN KAKI**

Tahun Ke Satu dari Rencana Dua Tahun

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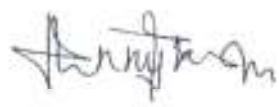
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ABSTRAK

Penelitian ini dimaksudkan untuk menggali dimensi yang mendasari penilaian masyarakat terhadap daya tarik koridor jalan untuk berjalan kaki dan mendapatkan model teoritik hubungan karakteristik koridor jalan (yang dioperasionalkan melalui penilaian masyarakat terhadap daya tarik koridor jalan untuk melakukan aktivitas berjalan kaki) dengan minat masyarakat untuk berjalan kaki. Konsep daya tarik koridor jalan untuk melakukan aktivitas berjalan kaki dievaluasi berdasarkan 4 aspek: kualitas fasilitas jalur pejalan kaki, estetika lingkungan, keberadaan aktivitas manusia, dan aspek kebersihan dan keamanan lingkungan. Aspek personal seperti variabel sosio-demografi dan perilaku berjalan kaki (frekuensi, tujuan berjalan kaki dan lain-lain) juga dimasukkan dalam model teoritik. Penelitian ini menggunakan metode survei dengan seperangkat instrumen penelitian yang terdiri dari *self administered questionnaire* dengan menerapkan teknik *multiple rating scale*, peta kota, dan *diary* kegiatan berjalan kaki. Tiga ratus responden dipilih secara *random* dengan menggunakan metode *multistage random sampling*.

Dengan menerapkan analisis faktor dapat diketahui dimensi yang mendasari penilaian masyarakat terhadap daya tarik karakteristik koridor jalan untuk berjalan kaki. Untuk menggali hubungan antara karakteristik koridor jalan dengan minat masyarakat untuk berjalan kaki dilakukan analisis regresi, hingga dapat diperoleh faktor-faktor karakteristik koridor jalan yang signifikan mempengaruhi terbentuknya minat masyarakat untuk berjalan kaki. Selanjutnya aspek-aspek karakteristik koridor jalan yang menjadi prediktor minat masyarakat untuk berjalan kaki yang terungkap melalui analisis regresi dimasukkan dalam model teoritik hubungan karakteristik koridor jalan dengan minat masyarakat untuk berjalan kaki dengan menggunakan *path analysis*. Hasil penelitian menunjukkan bahwa ada lima dimensi atau faktor yang mendasari penilaian masyarakat terhadap daya tarik koridor jalan untuk berjalan kaki, yaitu Kualitas Fasilitas Pedestrian, Estetika Lingkungan, Tata Hijau, Aktivitas Visual Masyarakat, serta Keamanan dan Kebersihan Lingkungan. Hasil analisis menunjukkan bahwa 51,7% masyarakat memberikan penilaian yang sama terhadap daya tarik koridor jalan untuk berjalan kaki, yang ditentukan oleh kelima dimensi tersebut. Lebih jauh penelitian ini juga menemukan bahwa secara bersama-sama kelima faktor tersebut memberikan kontribusi 39,8% bagi terbentuknya minat masyarakat untuk berjalan kaki.

Kata kunci: karakteristik koridor jalan, daya tarik koridor jalan, fasilitas pejalan kaki, minat masyarakat

*Theoretical Model of the Relations Between Street Characteristics and People
Interest of Walking Activities*

Abstract

This study aimed to explore the underlying dimensions of people's evaluations on the appeal of street characteristics for walking and formulate a theoretical model of the relationship between street characteristics and the people's interest of walking. The concept of the appeal of the street for walking activity was evaluated based on four aspects: the quality of the pedestrian facilities, environmental aesthetics, the presence of human activities, and environmental aspects of safety and cleanliness. Personal aspects such as socio-demographic variables and walking behavior (frequency, purpose and walking, etc.) were also included in the analysis. This study used survey method using a set of instruments consisting of a self-administered questionnaire by applying multipliering scale technique, city maps, and walking activity diary. Three hundred respondents were randomly selected using multistage random sampling method.

Descriptive statistics, factor analysis, regressions model and path analysis were employed to answer the research questions. Results indicated that there are five underlying dimensions of street characteristics for walking namely: the Quality of the Pedestrian Facilities, Environmental Aesthetics, Green Space, the Presence of Human Activities, and Environmental Aspects of Safety and Cleanliness. The five factors count for 51.7% of the variance of street characteristic evaluations for walking. Furthermore, this study found that these five factors contributing 39.8 % to the formation of people interest of walking activities.

Keywords: street characteristic, pedestrian facilities, public interest, urban design

RINGKASAN

Aktivitas berjalan kaki penting bagi kesehatan. Orang yang secara reguler berjalan kaki sekitar 1,5 km per hari akan berkurang kemungkinannya untuk kehilangan fungsi fisiologis fisik tubuhnya (Borst, H. et al, 2008; Mor, et al, 1989). Aktivitas berjalan kaki merupakan bagian yang tidak terpisahkan dari lingkungan fisik sebagai wadah beraktivitas. Hasil-hasil penelitian terdahulu telah menunjukkan adanya hubungan antara lingkungan fisik dengan aktivitas berjalan kaki (Owen, N. et al, 2004). Sejalan dengan hal tersebut, maka memahami bagaimana atribut-atribut lingkungan dapat mempengaruhi aktivitas fisik menjadi perhatian berbagai penelitian tentang kesehatan masyarakat (Owen, N. et al, 2004). Oleh karena itu, membangkitkan minat perilaku berjalan kaki pada masyarakat dapat menjadi salah satu upaya untuk membantu memelihara kesehatan masyarakat (Borst, H. C., 2008).

Memadukan dua konsep penting yang saling berhubungan tersebut, yaitu lingkungan fisik dan aktivitas berjalan kaki, menjadi banyak menarik minat peneliti (misalnya Ball, K. et al., 2001; Borst, H. C. et al., 2008; Owen, N. et al., 2004). Namun demikian, dalam hubungannya dengan aktivitas fisik, penelitian-penelitian terdahulu selama ini lebih banyak memfokuskan diri pada aspek karakteristik individu seperti usia, gender, kondisi sosial-ekonomi, keinginan, motivasi dan sebagainya (Ball, K. et al., 2001). Padahal pengaruh lingkungan fisik terhadap perilaku berjalan kaki boleh jadi sama pentingnya seperti pengaruh karakteristik individu (Borst, H. C. et al., 2008). Salah satu lingkungan fisik yang penting dalam aktivitas berjalan kaki adalah koridor jalan. Oleh karena itu, desain koridor jalan telah menjadi isu penting dalam kebijakan kota dan perencanaan kota (Ge & Hokao, 2005). Namun demikian, penelitian-penelitian yang dimaksudkan untuk mengungkap hubungan antara lingkungan fisik koridor jalan dengan aktivitas fisik seperti berjalan kaki masih sangat terbatas jumlahnya. Penelitian-penelitian yang jumlahnya masih terbatas itupun sebagian terbesar dilakukan di negara-negara Barat (misalnya Ball, K. et al., 2001; Borst, H. C. et al., 2008) dan hampir tidak ada yang dari Indonesia. Oleh karena itu, penelitian ini dimaksudkan untuk mengisi kekosongan tersebut.

Penelitian ini dimaksudkan untuk menemukan model teoritik hubungan antara karakteristik koridor jalan (yang dioperasionalkan melalui daya tarik koridor jalan yang

atau data sosial-demografi masyarakat seperti usia, gender, etnik (suku bangsa), tingkat sosial-ekonomi, tingkat pendidikan, pekerjaan, dan lama tinggal di Kota Malang, serta perilaku berjalan kaki yang meliputi frekuensi berjalan kaki, lama berjalan kaki, tujuan berjalan kaki dan bersama siapa. Sedangkan "diary" berisi 16 lembar formulir catatan (untuk merekam kegiatan berjalan kaki selama satu minggu), dimana responden diminta untuk mencatat aktivitas berjalan kaki yang dilakukan pada hari kerja dan hari libur. Didalam form tersebut juga ditanyakan preferensi responden terhadap koridor jalan saat mereka beraktivitas berjalan kaki, dengan menggunakan *rating scale* dengan 10 skala, dari "sangat tidak menyukai berjalan kaki pada koridor jalan 4" (nilai 1) hingga "sangat menyukai berjalan pada koridor jalan A" (nilai 10). *Rating scale* tersebut disertai dengan *open-ended question* yang dimaksudkan untuk menggali alasan mengapa responden menyukai/tidak menyukai berjalan kaki pada koridor jalan tersebut. Pada form tersebut juga terdapat bagian yang dimaksudkan untuk menggali penilaian responden terhadap karakteristik lingkungan fisik koridor jalan. Responden diminta untuk menilai karakteristik koridor jalan dari 4 aspek (dikembangkan dari Ball *et al.*, 2001; Borst *et al.*, 2008; Owen *et al.*, 2004; Sepe, M., 2007), yaitu kualitas fasilitas pedestrian, estetika lingkungan, keberadaan aktivitas manusia dan kebersihan dan keamanan lingkungan, yang dijabarkan dalam 30 variabel. Responden menilai karakteristik koridor jalan menggunakan *multiple rating scale* yang terdiri dari 5 skala dari sangat tidak menyenangkan untuk berjalan kaki (nilai=1) hingga sangat menyenangkan untuk berjalan kaki (nilai=5). Selanjutnya peta jaringan jalan kota Malang dimaksudkan untuk merekam pengalaman responden terhadap koridor-koridor jalan yang disukai dan tidak disukai oleh responden untuk berjalan kaki.

Partisipan dalam penelitian ini terdiri dari 70% laki-laki dan 30% perempuan. Sebagian besar berusia 21-50 tahun (80%) dengan tingkat pendidikan umumnya SMU/SMK ke atas (79%). Pekerjaan responden sebagian besar di bidang swasta (66,7%) dengan tingkat sosial ekonomi menengah ke bawah (88%). Sebagian besar yaitu 81,3 % responden telah tinggal di kota Malang lebih dari 15 tahun. Sebagian besar responden menggunakan moda transportasi sepeda motor dan angkutan umum (74%), 64% responden berjalan kaki 1-3 kali perhari dan 36% responden berjalan kaki

1-3 kali perminggu. Lama berjalan kaki 5-20 menit (82,4% responden) dan 43,3% responden berjalan sendiri sedangkan 55,6% berjalan bersama keluarga atau teman.

Hasil penelitian menunjukkan bahwa terdapat hubungan yang signifikan antara karakteristik koridor jalan dengan minat masyarakat untuk berjalan kaki. Dengan menerapkan analisis faktor dapat diungkap bahwa ada 5 dimensi yang mendasari penilaian masyarakat terhadap karakteristik koridor jalan (dalam konteks daya tariknya untuk berjalan kaki) yaitu Kualitas Fasilitas Pedestrian, Estetika Lingkungan, Aktivitas Visual Masyarakat, Keamanan dan Kebersihan Lingkungan, dan Tata Hijau. Kelima dimensi tersebut menjelaskan 51,7% dari keberagaman yang ada di masyarakat, dengan kata lain 51,7% masyarakat memberikan penilaian yang sama terhadap daya tarik koridor jalan untuk berjalan kaki, yang ditentukan oleh kelima dimensi tersebut. Dengan analisis regresi dapat diungkap bahwa faktor Kualitas Fasilitas Pedestrian, Tata Hijau dan Estetika Lingkungan memberikan kontribusi terbesar bagi terbentuknya minat masyarakat untuk berjalan kaki. Dilihat dari besarnya kontribusi terhadap terbentuknya minat masyarakat untuk berjalan kaki, maka faktor Kualitas Fasilitas Pedestrian memberikan pengaruh yang paling besar, yang kemudian disusul oleh Estetika Lingkungan, Tata Hijau, dan Aktivitas Visual Masyarakat, sedangkan faktor Keamanan dan Kebersihan Lingkungan memberikan pengaruh yang paling kecil terhadap terbentuknya minat masyarakat untuk berjalan kaki, dibandingkan dengan faktor-faktor karakteristik koridor jalan yang lain. Secara keseluruhan kelima faktor karakteristik koridor jalan tersebut memberikan kontribusi 39,8% bagi terbentuknya minat masyarakat untuk berjalan kaki. Masih ada 60,2% faktor lain yang tidak ditemukan dalam penelitian ini yang dimungkinkan merupakan faktor non fisik. Selanjutnya berdasarkan hasil-hasil temuan penelitian tersebut, dengan menerapkan *path analysis* disusun model teoritik hubungan karakteristik koridor jalan dengan minat masyarakat untuk berjalan kaki.

Mengingat bahwa temuan penelitian ini masih merupakan hasil penelitian tahun pertama dari rencana dua tahun penelitian, maka perlu dilakukan penelitian lanjutan untuk menguji kestabilan model dan skala pengukurannya di tempat lain.

SUMMARY

Walking activity is important for health. People who regularly walk about 1.5 km per day will decrease the possibility of losing his physical function (Borst, H. et al, 2008, Mor, et al, 1989). Walking activity is an integral part of the physical environment. The results of previous studies have demonstrated an association between the physical environment and walking activity (Owen, N. et al, 2004). In line with this, the understanding of how environmental attributes can influence physical activity has become a focus of a wide range of research on public health (Owen, N. et al, 2004). Therefore, people walking behavior may be one way to help maintain people health (Borst, HC, 2008).

Relationship of the physical environment and walking activity then attracted many researchers (e.g. Ball, K. et al., 2001; Borst, H.C. et al., 2008; Owen, N. et al., 2004). However, in relation to physical activity, previous studies have mainly focused on the aspect of individual characteristics such as age, gender, socio-economic conditions, motivation and so on (Ball, K. et al., 2001), though the influence of the physical environment on walking behavior may be as important as the influence of individual characteristics (Borst, H.C. et al., 2008). One of the physical environment that are important in walking activity is the street. Therefore, the design of street has become an important issue in urban policy and planning (Ge & Hakao, 2005). However, these studies intended to reveal the relationship between the street and physical activity such as walking is still very limited and most of them are conducted in Western countries (e.g. Ball, K. et al., 2001; Borst, H.C. et al., 2008) and almost none from Indonesia. Therefore, this study is intended to fill the vacancy.

This study is intended to find a theoretical model of the relationship between street characteristics (which is operationalized through street attractiveness for walking activities) and people interest of walking activity. This theoretical model are expected to explain the pattern of relations between the two concepts and reveal the dominant factors of street characteristics that can predict people interest of walking activity. Although medical science has discovered the benefits of walking for health, without the support of an appropriate physical environment for walking activities, the

community remains not interested in walking. Therefore, the results of this study are expected to contribute an important theoretical basis for environmental design disciplines (such as architecture, urban design, and urban planning) as the basis for designing a conducive environment to support public health.

This research was conducted in the city of Malang based on qualitative and quantitative approaches. A qualitative approach is done through field observations to obtain physical characteristic of streets and to explore the reasons respondents liking/disliking a street for walking activity. Quantitative approach was conducted to explore people's perception and evaluations of the characteristics of the street (which is operationalized through people appraisal of the appeal of the street for walking activities) by using multiple rating scale technique. Some 300 respondents were selected using multistage probability sampling method. Three districts were randomly selected out of five districts in the city of Malang, which then from each of the selected districts (i.e. Sukun, Klojen and Kedungkandang) four sub-districts were selected, so that there were 12 sub-districts obtained as samples. In each of these sub-districts later selected two neighborhoods randomly. Further 25 household were selected randomly in each sub-district (which were selected from two neighborhood elected in each sub-district) as respondents using a research randomizer (www.randomizer.org). some 100 respondents for each district were selected for the study sample.

Respondents were asked to complete a self-administered questionnaire; diary to record walking activities, and a map of the street network system in the city of Malang. Self-administered questionnaire was intended to explore the personal data or socio-demographic data such as age, gender, ethnicity, socio-economic level, education level, occupation, length of stay in Malang, and walking behaviors include frequency of walking per day/per week, period of walking, purpose of walking and companion in walking. The diary form contains 16 sheets of notes to record walking activity for one week, in which respondents were asked to record their walking activities conducted on weekdays and holidays. People also asked to evaluate their preference of streets for walking using multiple rating scale ranging from "strongly dislike walking on the street" (score 1) to "strongly like walking on the street" (score 10). The rating scale is accompanied by an open-ended question that is intended to explore the reasons why respondents like/dislike walking on the street. On the form there is also a section that

is intended to explore the respondents' assessment of the street physical characteristics. Respondents were asked to assess the characteristics of the streets based on 4 aspects (developed from Ball et al., 2001; Borst et al., 2008; Owen et al., 2004; Sepe, M., 2007), namely the quality of pedestrian facilities, environmental aesthetics, the presence of human activity, and environmental safety and cleanliness, which translated into 30 variables. Respondents assessed street characteristics using multiple rating scale consisting of 5 scales from "very unpleasant to walk" (score=1) to "very pleasant to walk" (score=5). Furthermore Malang city road network map is intended to record the experiences of respondents in walking at the street that are preferred and not preferred by the respondent.

Participants in this study consisted of 70% men and 30% women. Most of them aged 21-50 years (80%) with the level of education at least highschool graduated (79%). Most of the respondents work in the private sector (66.7%) with the socio-economic level of the middle-low income (88%). Most of which 81.3% of respondents have lived in the city of Malang more than 15 years. Most of the respondents used motorcycle transport modes and public transport (74%). Some 64% of respondents walk 1-3 times per day and 36% of respondents walk 1-3 times per week. Length of walk around 5-20 minutes (82.4% of respondents). Some 43.3% of respondents walked alone, while 55.6% of them walk with family or friends.

Results showed that there is a significant relationship between street characteristics and people's interest in walking. By applying factor analysis it can be revealed that there are five dimensions that underlie people's evaluations on the characteristics of the street (in the context of its appeal for walkers), i.e. Pedestrian Facilities Quality, Environmental Aesthetics, People Visual Activities, Safety and Cleanliness, and Green Space. Those dimensions explain 51.7% of the diversity in the community, in other words 51.7 % of the people give the same rating to the appeal of the street for walking, which is determined by all five dimensions. By applying regression analysis it can be revealed that Pedestrian Facility Quality, Green Space, and Environmental Aesthetics provide the largest contribution to the formation of people interest in walking while the Safety and Cleanliness factors influence the smallest of the formation of community interest in walking. Results also indicated that according to the important of its influence to the formation of public interest in walking,

the Pedestrian Facilities Quality provide the greatest influence, which was followed by Environmental Aesthetics, and then Green Space, People's Visual Activities, and Safety and Cleanliness. In overall, all of the five dimensions of street characteristics contributing 39.8% to the formation of people's interest in walking. There are still 60.2% of other factors that are not found in this study, which is possible non-physical factors. Furthermore, based on the findings of these studies, path analysis applied to formulate a theoretical model of the relationship of street characteristics and people's interest in walking.

Given that the findings of this research study is the result of the first year of a two year research plan, it is necessary to do further research to test the stability of the model and measurement scale.

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