(a) Measures / scales for motivations for long distance hiking

Article name: Appalachian Trail Hiking Motivations and Means-end Theory: Theory, Management, and Practice

Gómez, E., Freidt, B., Hill, E., Goldenberg, M., & Hill, L. (2010). Appalachian Trail hiking motivations and means-end theory: Theory, management, and Practice. *Journal of Outdoor Recreation, Education, and Leadership*, *2*(3). https://doi.org/10.7768/1948-5123.1043

Note: Using means end theory (a marketing tool developed by Reynold and Gutman in 1982

Attributes --> consequences --> values (participants talk their way through the laddering technique—qualitative)

In this study, the author uses the Benefits of Hiking scale (quantitative instead of the laddering technique)

Measures:

- Motivations for hiking the AT

Scales:

- Benefits of hiking scale (BHS)-- a quantitative scale (Hill et al, 2010)/ article shown below

Article name: A benefits-based study of Appalachian Trail users: Validation and application of the benefits of hiking scale

Freidt, B., Hill, E. L., Gomez, E., Marni, G., & Hill, E. L. (2010). A benefits-based study of Appalachian Trail users: Validation and application of the benefits of hiking scale. *Physical Health Education Nexus, 2*(1), 1-22

Note:

- This study was designed to test the validity of Benefits of hiking scale
- The 63-item benefits version of the Benefits of Hiking Scale (BHS) is a quantitative, online survey instrument created using Inquisite version 8.0.
- The benefits component of the scale explored the typologies of benefits sought by AT users;
- A total of 30 items were used to measure Driver's typologies of recreation benefits with respect to hiking on the AT

Measures:

- use patterns (e.g., hiker type, time spent on trail, volunteerism, etc.)
- the typologies measured in this study were those identified by Driver (1998a; 1998b)—the improved condition (IMP), prevention of a worse condition (PREV), and realization of a psychological state (PSYC).
-
-

Scales:

- Benefits section was measured using a 7-point Likert scale

Recognition of a psychological experience (PSYC, α=0.90)

21. I hike because I recognize that it is spiritual. [d]	4.91	2.04	
22. I hike because I recognize that hiking creates bonds with others. [d]	4.83	1.79	
23. I hike because I recognize that hiking gives me a sense of self-reliance.	5.90	1.42	0.73
24. I hike because I recognize that hiking gives me a sense of higher self-esteem.	5.28	1.83	0.73
25. I hike because I recognize that hiking causes me to appreciate life more.	6.14	1.23	0.86
26. I hike because I recognize that hiking causes me to be more satisfied with my life.	6.00	1.42	0.85
27. I hike because I recognize that hiking makes me more aware of whom I am.	5.43	1.79	0.78
28. I hike because I recognize that hiking causes me to enjoy life more.	6.20	1.26	0.80
29. I hike because I recognize that hiking is connected to other positive aspects of my ife.	5.87	1.41	0.75
30. I hike because I recognize that hiking makes me feel healthier. [c]	6.02	1.39	

[a]– items underlined were not used in the measure of BENE construct
[b]-factor loadings were only presented for items included in the measure
[c]-item did not have the necessary factor loading during the internal validity check ($h > 0.6$)
[d]-item did not have the necessary factor loading during the external validity check ($h > 0.6$)

Freidt, Hill, Gomez, & Goldenberg Benefits Based Study

Improved condition (IMP, α=0.90,)

11. I hike because I feel that hiking improves my likelihood of living longer. [d]	4.79	1.95	
12. I hike because I feel that hiking improves my overall fitness.	5.91	1.55	0.85
13. I hike because I feel that hiking improves my overall health.	5.80	1.55	0.82
14. I hike because I feel that hiking improves my productivity at work. [c]	3.70	2.03	
15. I hike because I feel that hiking improves my social life. [c]	3.75	1.95	
16. I hike because I feel hiking improves muscle strength.	5.28	1.72	0.82
17. I hike because I feel hiking improves my physical flexibility.	4.84	1.83	0.74
18. I hike because I feel hiking improves my ability to adapt. [d]	4.81	1.98	
19. I hike because I feel hiking improves my ability to use all of my senses. [d]	5.37	1.81	
20. I hike because I feel hiking improves my environmental awareness.	5.66	1.67	

Freidt, Hill, Gomez, & Goldenberg Benefits Based Study

Table 1

Items used to Measure Driver's Typologies of Recreation Benefits

Items[a]	M	SD	h^2[b]
Prevention of a worse condition (PREV, α= 0.91)			
1. I hike because I feel hiking reduces stress.[c]	5.82	1.61	
2. I hike because I feel hiking reduces my chances of developing diabetes.	3.10	2.06	0.82
3. I hike because I feel hiking reduces my chances of having a heart attack.	4.09	2.11	0.85
4. I hike because I feel hiking reduces my chances of weight gain.	4.78	2.00	0.61
5. I hike because I feel hiking reduces my chances of premature death.	4.06	2.14	0.83
6. I hike because I feel hiking reduces my number of illnesses.	4.06	2.05	0.82
7. I hike because I feel hiking reduces feelings of alienation.[c]	3.07	2.03	
8. I hike because I feel hiking reduces the amount of unhealthy foods I eat.[c]	2.93	1.77	
9. I hike because I feel hiking reduces the amount of time I am sedentary.[d]	5.35	1.94	
10. I hike because I feel hiking prevents negative health conditions.	4.96	1.94	

Driver, B. L. (1998[a], January). Uses of the benefits approach to leisure. [Electronic version]. *Parks and Recreation*, *33*(1), 22-25.

Driver, B. L. (1998[b], February). The benefits are endless…but why? [Electronic version]. *Parks and Recreation*, *33*(2), 26-30.

Driver, B. L. (Ed.) (2009). *Managing to Optimize the Beneficial Outcomes of Recreation*. State College, PA: Venture Publishing, Inc.

Article name: Why individuals hike the Appalachian trail: A qualitative approach to benefits

Goldenberg, M., Hill, E., & Freidt, B. (2008). Why individuals hike the Appalachian trail: A qualitative approach to benefits. *Journal of Experiential Education*, *30*(3), 277–281. https://doi.org/10.1177/105382590703000311

Theory:

- Means end theory: interrelationship among product meaning at three levels of abstraction: attributes, consequences, and values (Goldenberg, Klenosky, O'Leary, & Templin, 2000).
    - Attributes: key "product" attributes include the length of the experience, loca-tion, activities done while in the backcountry setting, and the number and nature of individuals in the group.
    - Consequences: positive consequences, or benefits, for participants completing a wilderness-based experience may include: companionship and camaraderie, acquisition of skills needed to function in outdoor settings, or increased environmental awareness

- Values: self-esteem, warm relationships with others, self-fulfillment, and fun and enjoyment of life.

Measure:

- Measuring motives for AT hiker

Procedure:

- The process of means-end data collection is a qualitative approach termed laddering (Reynolds & Gutman, 1988). In this study, this question-ing technique was completed through phone and face-to-face interviews that lasted approximately 10 minutes for each interviewee.
- a series of open-ended questions
- Start by concrete questions then getting more abstract until the interviewee reaches I don't know answers- to better understand the values for the AT hiker
- data were analyzed through LadderMap (Gen-gler & Reynolds, 1995). LadderMap is an MS DOS program that creates Hierarchical Value Maps (HVM) based on input.
- From data collected based on implication matrix, a hierarchy value map was created

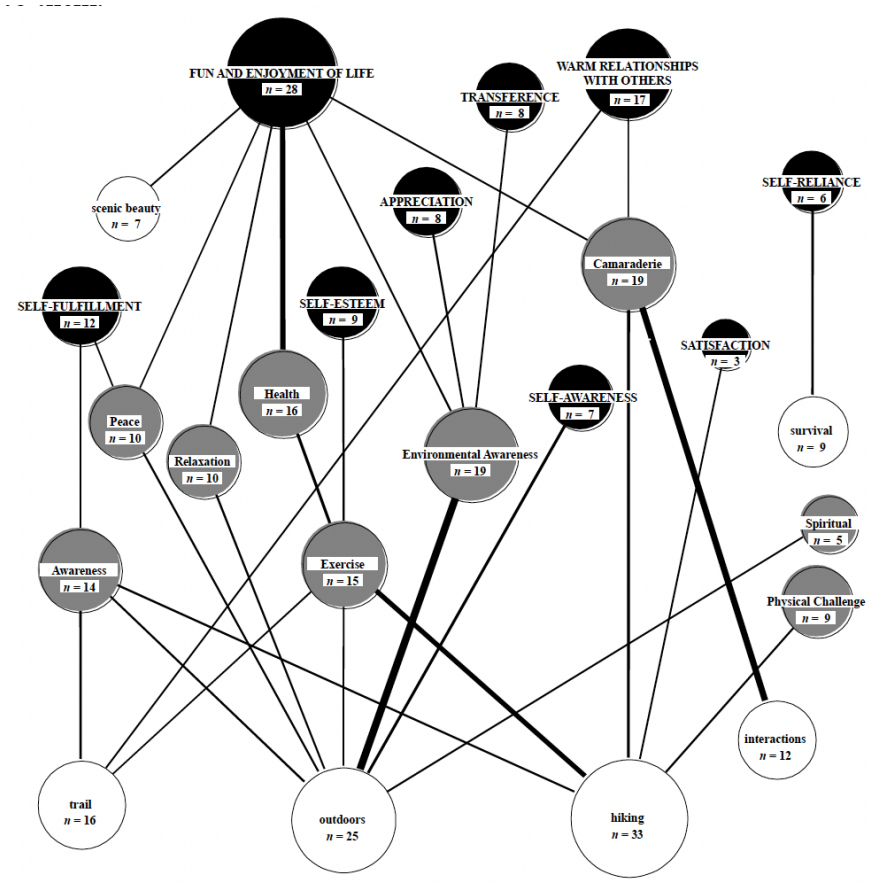


Figure 1. Appalachian Trail Hiker Means-end Theory Hierarchical Value Map

- The Hierarchical Value Map illustrates the strength of relationships between attributes, consequences and personal values found to be related to hiking on the AT. Attributes were listed in un-shaded circles, consequences were depicted in semi-shaded circles, and values were listed in completely shaded circles. The strength of the relationship between two items was depicted by the thickness of the line.

Article name: Motivation and mental well-being of long-distance hikers: A quantitative and qualitative approach

Mayer, K., & Lukács, A. (2021). Motivation and mental well-being of long-distance hikers: A quantitative and qualitative approach. *Heliyon*, *7*(5). https://doi.org/10.1016/j.heliyon.2021.e06960

- Using qualitative and quantitative methods

Measures:

- mental well-being of hikers (WHO-5 Well-Being Index was used to measure the participants' subjective psychological well-being)
- Motivation of hikers (motivation for starting hiking and continuing long-distance hiking week by week all over the year (Wengraf, 2001; Smith and Shinebourne, 2012) using face to face interviews)
- Exercise addiction was measured using Exercise Dependence Scale-Revised (Hausenblas and Downs, 2002b; M□onok et al., 2012)

Scales:

- Well-being (Each of the 5 items is scored from 5 (all of the time) to 0 (none of the time). The raw score is multiplied by 4, so the higher scores represent better well-being (Topp et al., 2015; Sus-□anszky et al., 2006).)
- Hikers responded on a 6-point Likert scale ranging from 1 (never) to 6 (always), a higher score indicates more exercise dependent symptoms

(b) Measures/scales for digital technology use (before, during, after hikes)

Article name: Time on the trail, smartphone use, and place attachment among Pacific Crest Trail thru-hikers

Amerson, K., Rose, J., Lepp, A., & Dustin, D. (2019). Time on the trail, smartphone use, and place attachment among Pacific Crest Trail thru-hikers. *Journal of Leisure Research*, *51*(3), 308–324. https://doi.org/10.1080/00222216.2019.1680264

Theory:

- Place attachment is linked to social bonding
- Place attachment consists of; place identity (embedded within the framework) and place dependence (functionality)- both develop at different temporal stages to create place attachment

- Smartphones can augment the outdoor experience—hypothesis is social bonding is linked to smartphone use
- Social bonding is linked to number of days spent on the trail

Measures:

- Smartphone usage
- Place attachment

Scale:

- For smartphone frequency use (5 point Likert scale)

Procedures:

- Seventeen statements were used to measure place attachment:
    - six items measured place identity,
    - six items measured place dependence, and
    - five items measured social bonding.
    - All place attachment items were selected because previous research had found them to be valid and reliable (Raymond, Brown, & Weber, 2010; Williams & Vaske, 2003).

  Brown, B., Perkins, D., & Brown, G. (2003). Place attachment in a revitalizing neighborhood:

  Individual and block levels of analysis. Journal of Environmental Psychology, 23(3), 259–271. doi:10.1016/S0272-4944(02)00117-2

- Measures of smartphone use were also constructed based on previous research (Ahn & Shin, 2013; Lepp, 2014).

Ahn, D., & Shin, D. (2013). Is the social use of media for seeking connectedness or for avoiding social isolation? Mechanisms underlying media use and subjective well-being. Computers in Human Behavior, 29(6), 2453–2462. doi:10.1016/j.chb.2012.12.022

- Traditional measures of smartphone use have focused on the number of text messages sent and received daily as well as the number of calls made and received daily. (Included in survey)
- an additional 20 individual measures of smartphone use were included to assess how frequently, on a scale from “never” (1) to “sometimes” (3) to “always” (5), thru-hikers used various smartphone applications. These statements asked about the frequency with which thru-hikers used each app on the PCT (remote setting) and in town.

Table 1. Paired T-tests of smartphone use on the trail and in town.

Question Group	Trail *M (sd)*	Town *M (sd)*	*Sig.*
Trail Apps (All)***	4.01 (1.137)	3.04 (1.061)	$p < .001$
*Guthooks****	3.93 (1.061)	2.83 (1.260)	$p < .001$
*Halfmile's PCT****	1.99 (1.292)	1.47 (.941)	$p < .001$
BackCountry Navigator	1.06 (.384)	1.07 (.398)	$p = .732$
*My Topos**	1.05 (.337)	1.06 (.390)	$p = .045$
Social Media			
*Facebook****	1.74 (.961)	2.84 (1.314)	$p < .001$
*Twitter****	1.07 (.359)	1.21 (.682)	$p < .001$
*Snapchat****	1.21 (.584)	1.46 (.939)	$p < .001$
*Instagram****	2.01 (1.182)	2.92 (1.489)	$p < .001$
*Pinterest****	1.02 (.233)	1.1 (.452)	$p < .001$
Entertainment			
*Listening to Music****	2.8 (1.287)	1.77 (.941)	$p < .001$
*Playing Games****	1.22 (.612)	1.3 (.731)	$p = .001$
*Surfing the Internet****	1.88 (.920)	3.46 (1.066)	$p < .001$
Other			
*Taking Photos****	3.9 (1.172)	3.05 (1.216)	$p < .001$
*Editing Photos****	2.57 (1.163)	2.96 (1.184)	$p < .001$
*Check Email****	1.89 (1.005)	3.26 (1.112)	$p < .001$
*Talking on Phone****	1.86 (.949)	2.99 (1.070)	$p < .001$
*Video Communication****	1.34 (.678)	2.07 (1.168)	$p < .001$
*Expected to be Available****	2.06 (.043)	3.16 (1.172)	$p < .001$
*Perceive Accessibility as Stressful****	2.16 (1.140)	2.42 (1.169)	$p < .001$

*indicates $p < .05$; ***indicates $p < .001$.

Article name: User Requirements for Location-Based Services to Support Hiking Activities p.189

Gartner, G. F., & Rehrl, K. (2008). *Location Based Services and telecartography*. Springer.

Theory:

- gather qualitative information about how hiking and other rural outdoor activities are currently planned and carried out and to observe the potential problems in carrying out these tasks
- 1. What type of unexpected changes may occur during the hike and what needs these situations cause for the hikers? What type of support actions would help hikers to recover from and adapt to these sudden changes?
- 2. What type of community and content needs the hikers may have while hiking?Are there some benefits that LBS could offer; for example; what type of needs do hikers have in relation to creating and sharing their own content while hiking?What kind of content should be provided for them, and how could it be used while carrying out an outdoor activity? How would hikers benefit from knowing the location and other information about the other hikers?

Measures:

- User Types
- Tasks during a hike

Tools:

- The potential future LBS users were contacted, and the user requirements were studied with three different usability engineering methods:
    - questionnaires,
        - eight pages long and started by gathering quantitative informa-tion about users' backgrounds, such as age, gender, frequency of outdoor activities and previous experience with maps.
        - The main part of the questionnaire consisted of open questions aiming to collect qualitative information on users.
        - The topics of the questions were related to different aspects of hiking, such as route planning, guidance material taken on the hike, current use and opinions of real-time positioning, user experiences during the hike and attitudes to sharing their experiences with other people, surprising situations the users had encountered during their hikes and users' ideas of 'dream devices' to support hiking trips.
    - focus group discussions; The focus-group discussions were carried out in two separate sessions, with two different groups of people sharing similar interests in relation to hiking.
        - Participants in the first group were interested in outdoor activities (e.g. hiking, cycling, canoeing, bird observing) and belonged to an association that aims to support outdoor activities among its members. The group comprised of five people aged 29 to 61 years.
        - The second group consisted of eight students from a sports institute, aged 18 to 20 years. Their outdoor activities were mainly related to their future work tasks, such as guiding customers at different outdoor events.
    - empathy probes;
        - The empathy probe in this study was 24 pages long diary, which was designed to be attractive, fun to fi ll with lots of colourful pictures , and easy to carry during the hike (A5 size, waterproof covers). The structure of the diary followed the same topics as the questionnaires and group discussions. The probe refers to a recording device and can use voice recorders for example but in this study they used A5 printed diaries.

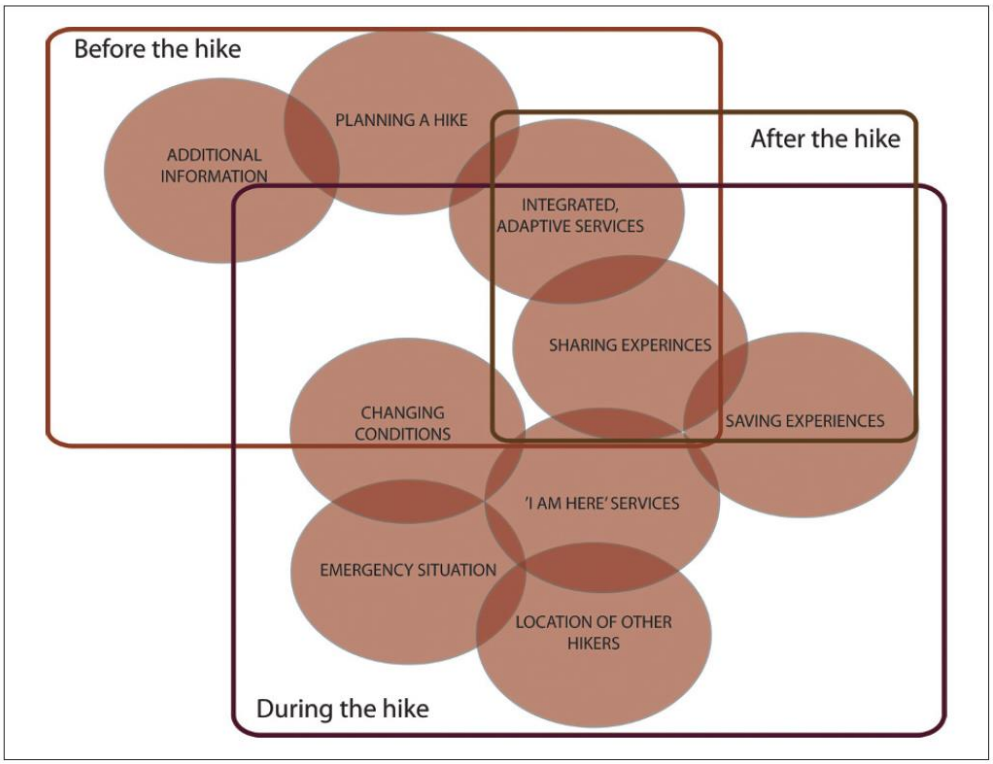


Fig. 11.3. Identified user requirements grouped into 9 thematic categories and their relationship to different phases of the hike (before, during and after).

Article name: Opportunities in Conflict on the Trail

Book: HCI outdoors theory design method

HCI outdoors: Theory, design, methods and applications. (2020). *Human–Computer Interaction Series*. https://doi.org/10.1007/978-3-030-45289-6

Questions:

- who uses trails, what technology they use, and their attitudes toward the usage of said technologies.

Tools:

- organized an initial workshop activity and asked an estimated 25 participants that spanned trail users, trail stakeholders, and researchers on different aspects of the outdoors, to first identify types of trail users on Post-It notes, then to cluster them in subgroups of their choosing.
- GROUP1 workshop session focused on discussing Technology on the Trail

Table 1 35 unique groups were curated from previously identified hiker roles and used to determine technological benefits for each. Contentious and/or interesting groups are in bold, and we further discuss them below ([1]Mental/Physical, [2]Search and Rescue)

Activists	Guide-Book Authors	Park Rangers	S & R[2] Workers
Bikers/Activists	Herbalists	Plant Foragers	Section Hikers
Bird Watchers	Historians	Prof/Army Training	**Solo Hikers**
Boy/Girl Scouts	Hunters	Pet Owners	Sponsored Hikers
Day Hikers	Locals	Picnickers	**Tourists**
Exercisers	Loggers	Property Owners	Thru-Hikers
Families	Maintenance Workers	Recreational	Trail Angels
Farmers	**M/P[1] Rehab**	Retirees	
Fishermen	Horse-Back Riders	**Scientists**	

Fig. 2 Selection of trail users from the workshop session: *Tourists, Mental/Physical Rehab, Families* and *Solo Hikers*. These groups of hikers were considered contentious either because of the vote discrepancy between the two groups of participants (Comparing votes between the *Yellow* team versus *Blue* team) or based on explicit identification of a group being contention based on workshop participants discussion

Article name: Walking: A Grounded Theory of Social Engagement and Experience

Asimakopoulos, S., & Dix, A. (2017). Walking: A grounded theory of social engagement and experience. *Interacting with Computers*, *29*(6), 824–844. https://doi.org/10.1093/iwc/iwx014

Methods:

- We describe a grounded theory (GT) framework concerned with the social engagement process central to the experience of walking.
- We describe a grounded theory (GT) framework concerned with the social engagement process central to the experience of walking.
- We provide empirical evidence from data gathered during a 102-day walk of the second author around Wales. We apply the Glaser approach techniques of GT to elaborate the social engagement transition and experience of walking.
- The framework culminates in four main themes: accuracy of social judgements, need for decision accountability, enhancing self-esteem and satisfaction of intrinsic motivation goals. We found that apparently 'solitary' walking is set within a rich technical and social matrix.
- We aim to extend the framework for other types of interactive systems, in particular ubiquitous and wearable devices for activity tracking and health applications.

Measures:

- Social and embodied experience
- Technologies and products for walking

Tools:

- the current study employed the Glaser version, also known as Pure GT
- The methodology for this study was chosen due to (i) focusing on walk-ing experience interactions and behaviors of social engagement and (ii) offering a 'fresh perspective on a well-known area' (Stern, 1994) by articulating HCI works regard-ing social engagement and the social experience of walking.
- GT analysis was performed independently by the first author, with the second author acting effectively as data subject
- Using SPOT live tracker to watch movement

Results:

- (i) accuracy of social judgments (ii) nurturing accountability of walking decisions (iii) leveraging self-esteem and (iv) activating intrinsic motivation goals accomplished during the walk and due to social engagements.

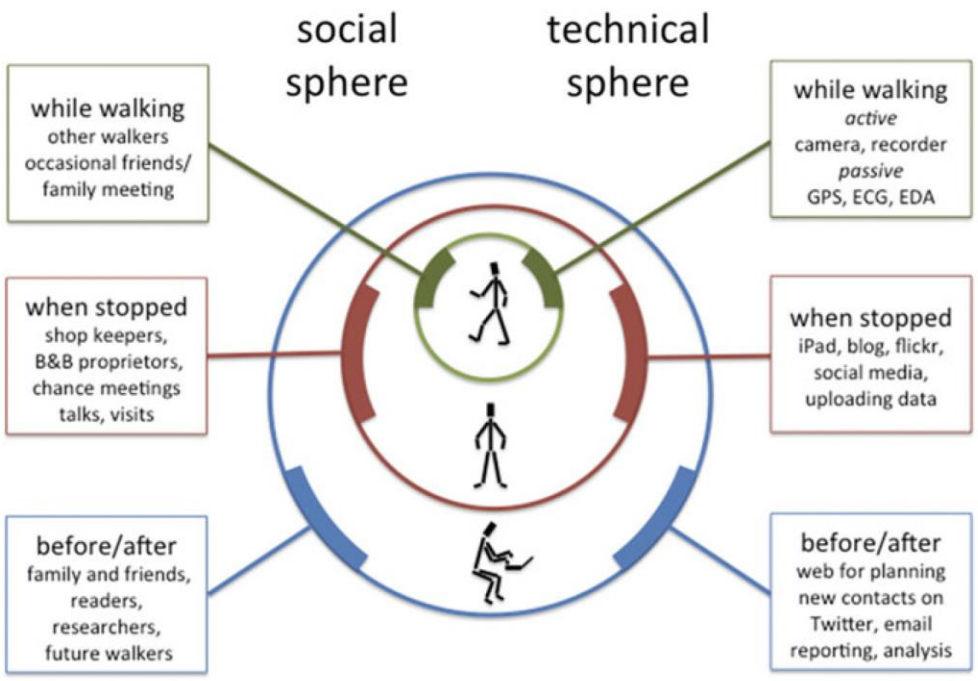


Fig. 1 Spheres of social connections and technology use (From Asimakopoulos and Dix (2017))

<u>Article name: The long-distance hiking social world along the Pacific Crest</u>

Virginia Tech. (2018). *Using K-mode clustering to identify personas for technology on the trail* (dissertation).

Measures:

- Types of hikers (motivation, frequency, habits, age and money spent)
    - 7 generic questions like user age, hiking habits and motivations, hike frequency, typical amount of money spent on a hike and preferred hiking gadgets.

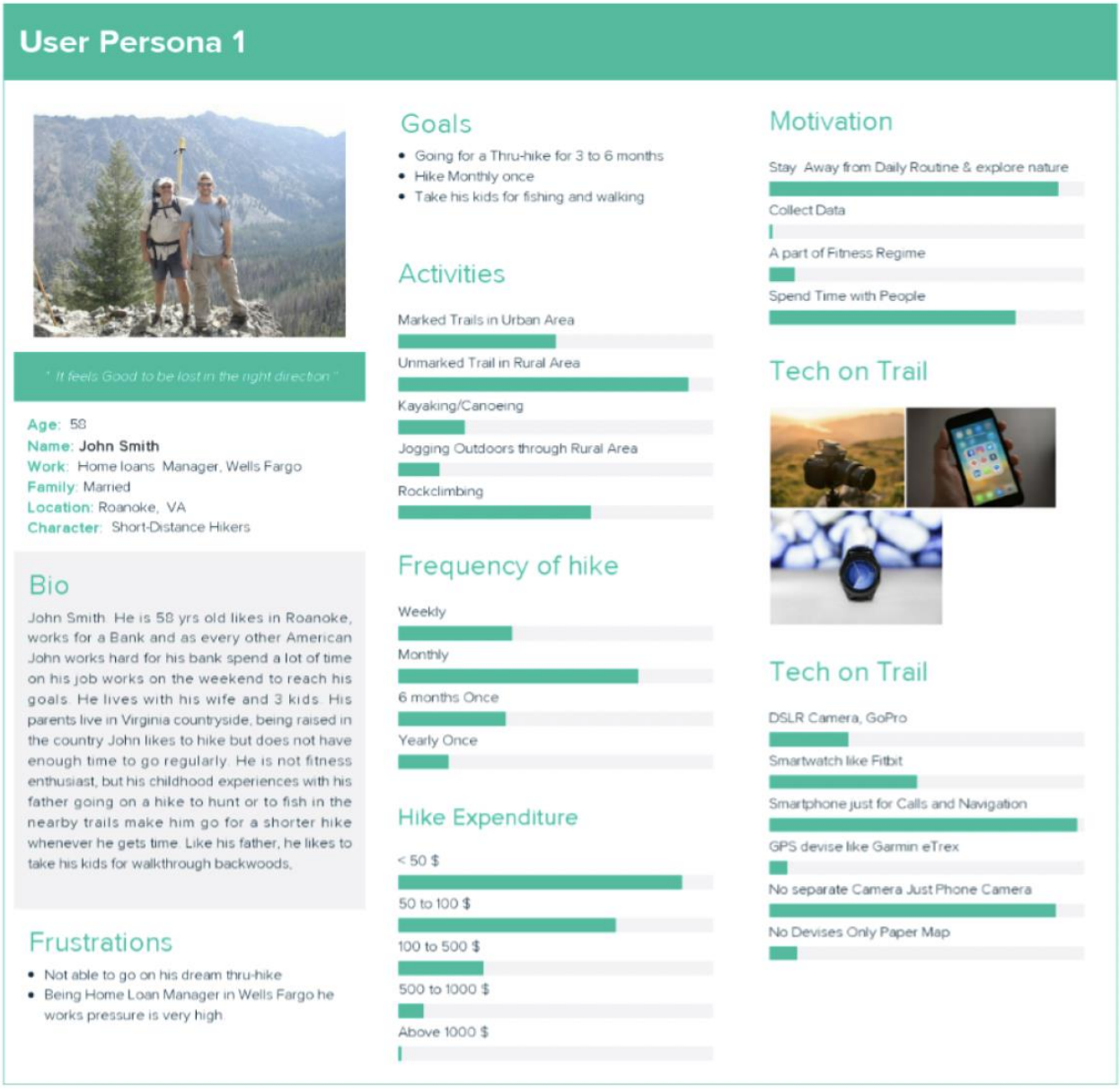
- Technology use (types and frequency)
    - Using would you rather questions
    - consists of 5 would-you-rather questions; some focused on devices like `Buy a DSLR so that a picture you take on a hike goes viral? Or buy a smartwatch for fitness and look t in a strangers image in a hike that goes viral?';

Clusters:

- using 6 Cluster characteristics we created 5 Personas
    - 1. Age with Expenses
    - 2. Age with Activities
    - 3. Age with Gadgets
    - 4. Activities with Maximum expenses
    - 5. Activities with Frequency
    - 6. Activities with Motivation
    - 7. Activities with Gadgets
    - 8. comparing Gadget preference with Would you Rather question sections

Tools:

- Questionnaires sectioned into three types, single-answer multiple-choice questions, multiple-answer multiple-choice questions, and dichotomous.
- For analysis: K-Mode clustering Algorithm with K = 6 for the complete data



(c) Measures of social experiences on the trail

Article name: The long-distance hiking social world along the Pacific Crest

Lum, C. S., Keith, S. J., & Scott, D. (2019). The long-distance hiking social world along the Pacific Crest Trail. *Journal of Leisure Research*, *51*(2), 165–182. https://doi.org/10.1080/00222216.2019.1640095

Measures:

- Types of hikers: day hikers and multiday hikers

- Pursuits: romantic and utilitarian
- Typologies of hikers

Tools:

- naturalistic inquiry (Salkind, 2010), an approach in which we observed, described, and interpreted experiences of individuals within the social world of hikers along the PCT
- Observation (45 days of hiking)
- Field notes
- Interview

Table 1. Typology of Pacific Crest Trail social world.

	The herd					
	Social hikers		Purist hikers		Shepherds	
Member characteristics	Party hiker	Gregarious hiker	Utilitarian purist	Romantic purist	Veteran hiker	Trail angel
Focus of leisure experience	Sociability	Sociability	Completion of task	Intimate physical and existential experience with trail	Social bonding	Stage for service volunteering
Intensity of participation	Important	Important	Important	Important	Central	Central
Level of life oriented toward hiking	High	High	High	High	Highest	Highest
Social setting	Tend to hike with other party hikers	Tend to hike with other gregarious hikers	Diverse	Tend to hike with romantic purists	Typically with friends they have made on the trail, other veterans	Long-distance hikers whom they take in
Constructed meaning of trail	Place to meet others and have a good time	Place to meet others and develop relationships	Current central life interest that is a challenge to be completed	Central life interest that is existentially beneficial	Central life interest, life is lived to make room for hiking	A means to practice altruism; family-type attachment

Article name: An examination of the relationship between leisure activity involvement and place attachment among hikers along the Appalachian Trail

Kyle, G., Graefe, A., Manning, R., & Bacon, J. (2003). An examination of the relationship between leisure activity involvement and place attachment among hikers along the Appalachian Trail. *Journal of Leisure Research*, *35*(3), 249–273. https://doi.org/10.1080/00222216.2003.11949993

Measures:

- 3 dimensions on activity involvement; self-expression, centrality and place attachment, were measured using items adapted from McIntrye and Pigram (1992) measure of involvement with hiking
- For place attachment, 8 items measured 2 dimensions; place identity and place dependence
- The effect of use type on relationship between activity involvement and place attachment

Scales:

- The alpha values for all constructs ranged between .6 through .93

Tools:

- Covariance structure analysis using LISREL (linear structural relations) was used to simultaneously test the model for 4 types of hikers

- Respondents in the study were asked to indicate their type of use; a-day hiker, b-overnight hiker, c-section hiker, d-thru hiker

TABLE 1
Item Means, Construct Reliabilities, and Factor Loadings

Scale Items		λ	Day Hikers M	Overnight Hikers M	Section Hikers M	Through Hikers M
Involvement[1]						
Self Expression		α	.72	.64	.60	.70
δ_1	When I participate in hiking I can really by myself	.70	3.83	3.91	4.08	3.93
δ_2	You can tell a lot about a person by seeing them hiking	.39	3.26	3.34	3.43	3.31
δ_3	When I participate in hiking others see me the way I want them to see me	.68	3.31	3.41	3.56	3.41
Attraction		α	.86	.87	.85	.86
δ_4	Hiking is important to me	.79	4.02	4.13	4.40	4.22
δ_5	Hiking interests me	.71	4.27	4.38	4.52	4.43
δ_6	Participating in hiking is one of the most enjoyable things that I do	.79	3.86	3.97	4.25	3.95
δ_7	Hiking is pleasurable	.65	4.46	4.49	4.55	4.40
δ_8	I really enjoy hiking	.76	4.39	4.46	4.60	4.42
Centrality		α	.93	.93	.91	.91
δ_9	I find a lot of my life is organized around hiking	.94	2.69	2.83	3.18	2.95
δ_{10}	Hiking has a central role in my life	.87	2.73	2.96	3.27	3.02
δ_{11}	I find a lot of my life is organized around hiking activities	.88	2.66	2.83	3.13	2.84
Place Attachment[1]						
Place Identity		α	.85	.85	.83	.84
ε_{12}	This trail means a lot to me	.69	3.92	3.91	4.43	4.44
ε_{13}	I am very attached to the Appalachian Trail	.88	3.26	3.26	3.93	3.96
ε_{14}	I identify strongly with this trail	.85	3.04	3.14	3.74	3.85
ε_{15}	I have a special connection to the Appalachian Trail and the people who hike along it	.63	2.93	3.13	3.78	4.10
Place Dependence		α	.85	.87	.87	.81
ε_{16}	I enjoy hiking along the Appalachian Trail more than any other trail	.84	3.12	3.07	3.59	3.21
ε_{17}	I get more satisfaction out of visiting this trail than from visiting any other trail	.91	2.86	2.87	3.40	3.05
ε_{18}	Hiking here is more important than hiking in any other place	.82	2.59	2.59	3.08	2.66
ε_{19}	I wouldn't substitute any other trail for the type of recreation I do here	.50	2.46	2.45	2.71	2.38

[1]Measured using a Likert-type format where 1 = Strongly disagree and 5 = Strongly agree

TABLE 4
Correlations Among Constructs

	Construct (*t*-value)				
	Self Expression *r* (*t*-value)	Attraction *r* (*t*-value)	Centrality *r* (*t*-value)	Place Identity *r* (*t*-value)	Place Dependence *r* (*t*-value)
Day Hikers					
Self Expression	1.0 (14.45)	—	—	—	—
Attraction	**.78** (16.53)	1.0 (19.21)	—	—	—
Centrality	.66 (17.83)	.66 (19.27)	1.0 (26.03)	—	—
Place Identity	—	—	—	1.0 (15.75)	—
Place Dependence	—	—	—	**.68** (18.28)	1.0 (21.00)
Overnight Hikers					
Self Expression	1.0 (14.45)	—	—	—	—
Attraction	**.72** (14.77)	1.0 (19.21)	—	—	—
Centrality	.66 (17.83)	.66 (19.27)	1.0 (26.03)	—	—
Place Identity	—	—	—	1.0 (15.75)	—
Place Dependence	—	—	—	**.70** (18.35)	1.0 (21.00)
Section Hikers					
Self Expression	1.0 (14.45)	—	—	—	—
Attraction	**.62** (10.40)	1.0 (19.21)	—	—	—
Centrality	.66 (17.83)	.66 (19.27)	1.0 (26.03)	—	—
Place Identity	—	—	—	1.0 (15.75)	—
Place Dependence	—	—	—	**.65** (15.17)	1.0 (21.00)
Thru Hikers					
Self Expression	1.0 (14.45)	—	—	—	—
Attraction	**.74** (12.88)	1.0 (19.21)	—	—	—
Centrality	.66 (17.83)	.66 (19.27)	1.0 (26.03)	—	—
Place Identity	—	—	—	1.0 (15.75)	—
Place Dependence	—	—	—	**.48** (10.03)	1.0 (21.00)

Note: Bolded correlation coefficients indicate freely estimated parameters across groups. All other correlations were held invariant.

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