The Role of English in Human Capital Attainment for Generating Employment and Income:
The Case of Tourist Industry in Siem Reap, Cambodia

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Summary

Throughout economic history of developed and developing countries, the generation of employment and income has been one of the most important and most difficult endeavors for governments, policy makers, and economists. As a result, many research works and studies, both theoretical and empirical, have been conducted to solve the problem of employment and income globally. However, research on employment and income through English still lacks. This paper verifies the relationship between employment and income through English with survey work completed in the tourist industry in Siem Reap, Cambodia which has blossomed around World Heritage Site Angkor Wat since the early 2000s. Section (1) explains tourist industry growth in Cambodia in general as background work for this paper. Section (2) offers a literature review containing material related to the author's study. Section (3) gives an overview of the survey method, dates, location, sample, and limitations. Section (4) contains socio-economic background of the tourist industry employees. Section (5) explains the method of analysis and research findings. Section (6) discusses these findings. Section (7) concludes, and section (8) gives ideas for further research.

Introduction

While many economic researchers have been able to empirically account for income growth due to higher education and other skills, there was still an unknown factor which also contributed to rapid economic growth in many developed countries. Some growth could be attributed to the economic importance of schooling, while other growth, Gary Becker (1964) explained, must be growth in the unseen factor of human

capital, or the intangible "stock" one has developed throughout one's life in education, knowledge, training, skills, good health, on-the-job training, overall knowledge, values, habits, non-measurable skills, and other elements. Human capital investments improve per capita income, but to what degree is difficult to measure. However, Becker has found that human capital investments do contribute to per capita GDP growth over years of working life.

The purpose of this paper is to explore English education and ability as factors of human capital that contribute to per capita GDP income in a developing country, specifically, Cambodia. Largely, three factors combined to lift Cambodia out of hard times faced after the Pol Pot[1] and Khmer Rouge regime: 1) international aid agencies, 2) trade, and 3) tourism. All of these factors are important; however, tourism has been greatly responsible for economic growth in Cambodia and especially Siem Reap after Angkor Wat was classified as a World Heritage Site in 1992. It is obviously offering more employment opportunities than trade, banking, or professional businesses. There is also an incredible lack of individual socioeconomic data in Siem Reap, especially on the role of English and education in employment. This being the case, the author has set out to investigate the returns to human capital investments in English education and ability to individual tourist industry (TI) employees in Siem Reap. English background, along with various other forms of human capital, such as on-the-job training and other learned skills, should contribute to returns on investment if treated as a form of education. The author has found through survey work that employees with higher overall education, longer years of general schooling, longer years of English study (both in school and on one's own), and spending more money to learn English proficiency, all have higher paying jobs in the TI of Siem Reap. It is, of course, impossible to say that English alone attributed to the higher incomes and returns. There are many other factors that contribute to higher incomes and employment such as ambition, drive, incentive, ability, and other personal attributes.

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1)   Pol Pot, a ruthless dictator, executed millions of Cambodian citizens from 1975-1979 in the hopes of makinCambodia an agrarian utopia. His followers, the Khmer Rouge, destroyed data and burned books. Millions of dollars in aid were given from various countries during the rebuilding of Cambodia. See BBC News Asia-Pacific for more details.

However, individuals with English ability have better overall income and employment experiences according to survey results. These experiences include ease of finding jobs, ability to keep jobs, better lifestyles, better conditions overall, better sense of community contribution, and better sense of their own employment.

To this end, this paper will examine the background of Cambodia in section 1. The background includes an exploration of Cambodian TI, employment aspects, and education. Section 2 offers a literature review, and section 3 explains the survey method, dates and location, sample, and limitations. Section 4 contains socio-economic background of SR TI from the survey. The method analysis and statistical research findings from the survey appear in section 5. Section 6 discusses the findings and gives information on income distribution and employment through English. Section 7 offers a conclusion, and section 8 gives ideas for further research.

1. Cambodia Background

1.1 Tourism

International tourist activities have increased rapidly in and around Indochina since the end of the 1990's; international tourists have increased worldwide since 2000. Table 1 shows various world arrival markets from 2000 to 2012. Here, Asia and the Pacific tourism increased a remarkable 111%. Asia and Pacific tourism captured 23% of the market share in 2012 (World Tourism Organization, 2013).

Table 1. International Tourist Arrivals and Market Share 2000-2012 (millions)

UNTWO Regions	2000	2005	2009	2010	2011	2012	Change (%) 2000-12	Share (%) 2012
World	674	797	882	939	980	1,035	53	100
Europe	385	439	461	474	503	535	38	51
Asia/ Pacific	110	154	181	205	216	233	111	23
Americas	128	133	141	150	156	162	26	16
Mid/East	24	36	52	60	55	53	120	5
Africa	27	35	47	50	50	52	92	5

Source: World Tourism Organization, 2013

As for tourism in Cambodia, the backpacker destination of choice is also enjoying a healthy tourist industry since Angkor Wat became a World Heritage site

in 1992. TI receipts for Cambodia have dramatically increased and tourist influx has risen remarkably between 1993 and 2012 as seen in Table 2. Worth mentioning is that the TI accounts for 10% of global GDP (WTTC, 2003 in Ennew, 2003). National and per capita GDP increase and economic impact from tourism have been significant for developing countries all over the world. TI was a major source of revenue for continued economic growth in the future. In 2012, international visitors to Cambodia reached 3,584,307 up from 2,881,862 in 2011 (Table 2), a 24.4% of change. This is an increase of almost 700,000 travelers, which is quite a large amount considering that the world had just recovered from the Lehman Shock of 2008. In 1999, the number of total tourists was at 367,743. It has until now increased nearly 10 times to 3,584,307 in 2011. Economic contributions to GDP from TI receipts in 2012 was US $2.2 million; TI has been continually the largest contributor to service sector growth, with hotel occupancy rates at over 68% in 2012 (Cambodia Ministry of Tourism, 2011).

Table 2. Cambodia Visitor Arrivals, 1993-2012.

Year	Total Number of Tourists	Percent of Change	Average Length of Stay (days)	Hotel Occupancy (%)	Tourism Receipts (US $million)
1993	118,183	0.00	N/A	N\A	N\A
1994	176,617	49.44	N/A	N/A	N/A
1995	219,680	24.38	8.00	37.00	100
1996	260,489	18.58	7.50	40.00	118
1997	218,843	-15.99	6.40	30.00	103
1998	289,524	32.30	5.20	40.00	166
1999	367,743	27.02	5.50	44.00	190
2000	466,365	26.82	5.50	45.00	228
2001	604,919	29.71	5.50	48.00	304
2002	786,524	30.02	5.80	50.00	379
2003	701,014	-10.87	5.50	50.00	347
2004	1,055,202	50.53	6.30	52.00	578
2005	1,421,615	34.72	6.30	52.00	832
2006	1,700,041	19.59	6.50	54.79	1,049
2007	2,015,128	18.53	6.50	54.79	1,400
2008	2,125,465	5.48	6.65	62.68	1,595
2009	2,161,577	1.70	6.45	63.57	1,561
2010	2,508,289	16.04	6.45	65.74	1,786
2011	2,881,862	14.90	6.50	66.15	1,912
2012	3,584,307	24.4	6.30	68.49	2,210

Source: Tourism Statistics Report, Ministry of Tourism, 2012

Table 3 shows the list of top 10 tourist arrivals to Cambodia in 2011-2012. In 2011, the top 5 were Asian countries: Vietnam, Korea, China, Lao, and Thailand whose visitors would most likely use international English to communicate, 6th was

Japan, whose visitors would probably use English as an International Language (EIL), or have the opportunity to have a Japanese speaking guide exchange with employees. Following at 7th place was the U.S.A., whose visitors would definitely use native English, and 8th was France whose visitors would use either France (since Cambodia was a former French colony) or EIL, and 9th was Australia whose visitors use native English in all communication. Finally, 10th was Malaysia whose visitors would most likely use EIL in communication. Within the top 10, 3 were inner circle countries, in which English is the mother tongue, 2 were outer circle, where English is a main language or lingua franca, and 4 were expanding circle countries where English is used a foreign language.[2] In addition, Table 3 gives 2012 arrival country population. This is done to illustrate the number of travelers who would potentially use English in pleasure travel. The table also gives the number of those in 2012 who specifically traveled for pleasure, increasing the demand for tour guides who use English. It is evident that most people from the top 10 countries visited Cambodia for pleasure travel, further the necessitating the use of English in activities. The *tourist share* denotes the total share of tourists to Cambodia from each country.

Table 3. Top 10 Tourist Arrivals to Cambodia, 2011-2012 (in number)

Country	2012 Arrival Country Population (millions)	2011 Total Cambodia Arrivals (number)	2012 Total Cambodia Arrivals (number)	2012 Pleasure Travel (number)	2012 Pleasure Travel (% of total)	Tourist Share %, 2012
1. Vietnam**	89.0	614,090	763,136	735,781	96	21.3
2. Korea***	48.9	342,810	411,491	392,373	95	11.5
3. China***	1,350.4	247,197	333,894	281,669	84	9.3
4. Lao PDR**	6.5	128,525	254,022	253,241	99	7.1
5. Thailand**	69.9	116,758	201,422	183,824	91	5.6
6. Japan***	127.6	161,804	179,327	167,410	93	5.0
7. U.S.A.*	313.9	153,953	173,706	131,895	75	4.8
8. France***	63.6	117,408	121,175	96,017	79	3.4
9. Australia*	22.0	105,010	117,729	98,414	83	3.3
10. Malaysia*	29.0	102,929	116,764	109,127	93	3.3

Source: Tourism Statistics Report, Ministry of Tourism, 2012
*Inner circle countries
**Outer circle countries
***Expanding circle countries

2) See Kachru, 1985, for further discussion.

Even though outer circle Asian countries topped the list of international visitors in 2011-12, English was most likely used as an international language by these groups. Yoneoka (2009), who has done extensive research on language needs of East-Asian tourism, found that among China, Japan, and Korea, EIL is widely needed, especially in tourism businesses. Table 3 shows that China, Japan, and Korea were countries that visited Cambodia in 2011-12, and according to Yoneoka, probably used EIL in travel. Other countries also used native English or EIL in day to day travel. In addition, in 2010 pleasure tourists directly to Siem Reap increased to 704,254 from 195,776 in 2000 (Table 4). Travelers to Siem Reap for business showed a growth of 461,000 travelers between 2002 and 2008, and actually declined by 2,343 travelers in 2009. Travelers to SR for official purposes decreased by 585 people between 2002 and 2010. Even with this decline, travelers for business and official reasons from both inner and outer circle countries most likely used English for communication purposes. Unfortunately, data on purpose of visit for tourists to Siem Reap for 2011, 2012, and 2013 is not compiled by the Ministry of Tourism as of yet.

Table 4. Travelers to Siem Reap by Purpose of Visit, 2002-2010

Year	Pleasure	Business	Official
2002	195,776	2,670	4,345
2003	178,638	2,848	4,812
2004	297,279	2,746	9,348
2005	426,807	2,821	10,497
2006	591,474	2,778	5,423
2007	751,537	5,699	4,015
2008	656,776	7,063	4,665
2009	574,571	4,720	4,693
2010	704,254	4,658	3,760

Source: Tourism Statistics Report, Ministry of Tourism, 2010

1.2 Employment

Employment data from the National Institute of Statistics of Cambodia in Table 5 shows that the percentage of working age population (ages 15-64) per sector in 2010 was the highest for the services industry (which encompasses TI). The employed population

reached 75% in Phnom Penh, 63% in other urban areas (such as Siem Reap), and 21% in other rural areas (National Institute of Statistics, 2010). Although the value was low in rural areas, the services sector always provides necessary employment for young Cambodians who have drive and ability. The services sector has large investment from foreign owners who can speak English well; those working in services need and use EIL regularly.

Table 5. Employed Population Share by Sector and Region, 2010

	Phnom Penh	Other Urban	Other Rural
Employed Population (,ooo)	687	772	6,214
Agriculture (share %)	1.6	19.7	64.3
Industry (share %)	23.3	17.8	15.3
Services (share %)	74.9	62.5	20.5
Other {Mining, etc} (share %)	0.2	0.0	0.0
Total	100%	100%	100%

Source: Labor and Social Trends of Cambodia, Ministry of Planning, 2010

As for employment, according to the 2011 Statistical Yearbook of Cambodia, 71% of both men and women ages 15-64 in the labor force with post-secondary education were employed, compared with 59% who were unemployed. In addition, 43.3% of employed service workers completed secondary schooling, as compared to 6.5% who had no schooling whatsoever. Of those remaining, 24.9% had not completed primary school, and 25.3% of employed labor force had completed primary school only.

1.3 Education

It goes without saying that many jobs cannot be obtained without education, and these days, English education plays a major role in Cambodia. In 1996, the Cambodian government solidified the 1989 decision to offer English and French as foreign languages within secondary schools. Grades 7, 8, and 9 study English or French 5 hours per week; the students mostly continue to study the same language 4 hours each week in high school. According to Clayton's survey (2006), in the past students mainly chose English as their official language. During aid assistance, language education has increased as government officials became aware of the need to communicate with western NGO's effectively. At first, the Cambodian government

did not want to educate students in Western languages because they were afraid to let students absorb Western ideas. However, the government soon squelched this notion in an attempt to move into a market economy, and invited Australian lecturers to further train new English teachers. In turn, Cambodian graduates were involved in managing educational projects, and many were sent to Australia in training for Certificate's and Master's courses. Australia was quite active in the training of secondary education. Other educational agencies included the Catholic Mission Society of America (a consortium of aid agencies), and the British Voluntary Service Overseas (VSO), who trained Cambodians as English language teachers. Both the French Liberte and the Centre Cultural Francaise in Phnom Penh offered French teacher training programs since the 1980's in secondary education (Clayton, 2006). Another program, the U.S. Government's ACCESS Micro-scholarship Program has implemented its Micro-scholarship Program in many developing countries around the world. Its branch in Phnom Penh offers a two-year English language program to minority high school students of 14-18 years of age, during which immersion-style classes English are taught in a friendly, open environment focusing on the four skills of English: reading, writing, listening, and speaking. English is taught by trained Cambodian English teachers in local English schools in various areas during the program, and gives students the opportunity to use English both inside and outside the classroom. The program was instituted to give students the chance to increase their English language skills so that they can ultimately find appropriate jobs and help support their families (US Embassy, 2011). The previous programs are wonderful and worthwhile. Unfortunately, many of them are short-lived due to economic constraints.

Universities in Cambodia have also been offering English and other languages as a major, although there is not a clear-cut definition of foreign languages in Cambodian tertiary education. It was felt by many that Khmer should be the language of education, although assistance money from donor countries has kept the need for teaching western languages intact. Of late, English language has become the language of choice for students in universities. In fact, the Royal University of

Phnom Penh (RUPP) Institute of Foreign Languages, the English Department offers 2 main programs: the Bachelor of Education in Teaching English as a Foreign Language (TEFL), and the Bachelor of Arts in English for World Skills. The aim of the BEd in TEFL is the development of trainees' skills in teaching English as a Foreign Language (EFL) at the secondary school level, while the BA in English for World Skills prepares students' English related skills for work and beyond. RUPP also has lately instituted a tourism department where all classes are taught and learned in English. Although we can see that English has become important in education in Cambodia, RUPP is perhaps the one good example of English education at the tertiary level (Royal University of Phnom Penh, 2012).

Results from the author's 2012 survey concur that education is extremely important in TI recently (Fig. 1). In fact, 42% of all respondents have graduated high school, and 27% are currently attending university, a great change from earlier economic life in Cambodia. The author believes this is perhaps this is unique to TI businesses, as TI employees need education to get good jobs, especially in hotels and travel agencies.

Figure 1. Education Attainment, TI Labor Force, 2012
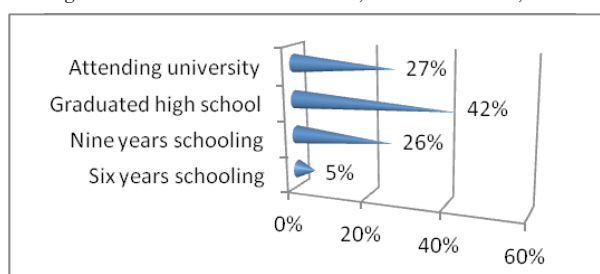
Source: Compiled from survey data, 2012

2. Related Literature

The author will introduce several documents that are related to his study. These include: human capital; schooling, experience and earning; income and employment with English proficiency in Africa; language skills and earnings of childhood immigrants to the U.S.; and English proficiency and income in Mexican

immigrants to the U.S. As mentioned in the introduction of this paper, Gary Becker, noted University of Chicago economist and Nobel Prize Laureate in economics, conducted empirical research in an economic and social field known as human capital. Human capital is the education, skills, training, and knowledge one has developed over one's life, and are akin to other more tangible items such as a company's stock of equipment or machinery. Becker has done much research, developed many models on returns to education and other human capital, and specifically investigated the role of age, training, and education on monetary returns to investment. In *Human Capital*, Becker (1974) first wished to determine the rate of return to education human capital attainments, but soon shifted towards creating a more unified theory of economics where all investments, such as on-the-job training and other knowledge, were taken into account. He noted that many economists were surprised that they could not account for the high levels of income they found in data. For example, age and years of education were two facets that could explain the income level of a particular person. It was found, however, that sometimes these facets could not explain employment and income levels entirely. Hence, some hidden aspect was at work influencing income levels, and Becker characterized this hidden aspect as human capital.

In *Schooling, Experience, and Earnings*, Mincer (1974) studied the simplest form of human capital: schooling. Mincer took the foundation of human capital research by Becker, and examined the influence of years of schooling as a type of human capital attainment for higher incomes. Mincer used lifetime earnings to investigate the role of education over one's entire working life after schooling, from age 15 to age 64. The objective of Mincer's study was to understand the observed income distributions of accumulated investments in human capital for a set of workers. Mincer then examined the distribution of personal income within the various age and education groups in his study. Economists have known for years that correlations between educational attainment and income over one's life can be weak, but after analysis, Mincer found several things: 1) people with more schooling have higher annual incomes, 2) the difference between individual earnings because of the differences in investment in schooling is larger when the return on investment is higher, and

3) the difference is larger if the working life is shorter. Mincer made inroads by obtaining empirical proof. In fact, in quantitative analysis Mincer has examined income distributions at length. One problem Mincer had at that time was the lack of information as to an individual's investment in human capital. In addition, long-term income shifts and time spent in schooling or unemployment made individual earnings difficult to compare. As Becker (1964) noted, the accumulations in human capital do not equal the total capital stock because some investments, such as those made in the home for example, are excluded from the individual's net stock, and are therefore hidden. Nevertheless, Mincer was able to receive some insight into the analysis of income distribution and individual earnings.

In *English Language Proficiency and Earnings in a Developing Country: the Case of South Africa*, Casale and Posel (2010) investigated the role of English in a country where the dominant language of business is English. In their research they found that high returns to English language proficiency exist, and that there was a large advantage to reading and writing English *very well*. Casale and Posel used data on those who use English at home and general English language proficiency to determine the relationship on English proficiency and earnings in African men. The data used for Casale's research was based on the National Income Dynamics Survey (NIDS), which tracked 28,000 individuals in approximately 7,300 households nationwide. NIDS gathers information on English language in self-reporting on a four point scale of *very well, fair, not well, and not at all* (Casale and Posel 2010). Casale chose a narrow definition of proficiency for their data examination, focusing on the ability to read and write the English language *very well*. Casale and Posel tested the relationship between earnings and English proficiency among African men between ages 25 and 65. Statistical results showed that individuals with a completed secondary education earned 120% more than those without any schooling. Proficient English language users earned almost 55% higher than non-proficient English users. The implications are that English language proficiency can elevate job productivity and also lead to more effective communication among co-workers and management. In the end, a high premium to English language proficiency for over 50% of respondents was found.

Results also show that Africans who are not English proficient have no gain in the returns to completed secondary or post-secondary education outcomes. In the study, African men who had post-secondary education earned approximately 97% if they were also proficient in the English language. Statistical results were low but positive, and showed positive correlations between English proficiency and earnings, at least in the case of South Africa. We expected the correlation to be high, but this may be due to the survey situation, but it may well be due to the accuracy of obtaining English proficiency. In many data collection situations, respondents' own English ability is self-reported. However, this is not accurate as own abilities can be over or under-valued. In addition, this study focused on reading and writing only as the main determinant of English proficiency. The author suggests a better method of determining English ability is through a proxy such as test scores (such as TOEFL or TOEIC), but this excludes many developing countries due to the cost. Perhaps the best way is a language proficiency test during face to face interviews. While these methods are time consuming and costly, a similar method must be achieved to measure English proficiency accurately. This could be accomplished by creating simplified version of a language proficiency assessment test which should be produced and offered inexpensively over the Internet.

Bleakley and Chin's, *Language Skills and Earnings: Evidence from Childhood Immigrants* (2003) found positive results when measuring English proficiency and wages with adult migrants who immigrated to America as children. They worked under the assumption that inadequate language skills increase the earnings gap when measured with nativity. The 2000 U.S. Census, on which Bleakley and Chin base their research, stated that 10.4% of the U.S. population was foreign born, and that most immigrants were from non-English speaking countries. In the U.S. Census, respondents rated their own English ability on four levels: speaking *only English*, speaking *very well*; speaking *well; not well; or not at all*. In the 2000 census, 47 million residents in the US spoke a language other than English at home, and that 21 million of those spoke English less than *very well*. Bleakley and Chin found a positive effect on income and education in previous research using 1990 census

data. A dramatic part of the effect of language skills appears to be achieved by schooling. Language proficiency's role in the establishment of human capital is more important that the effect of language on the entire labor product. When examined in a comparison with US immigrants, it can be predicted that those who enter the U.S. at a young age will be more adept at learning English as a second language than those who arrive later. This prediction is used in Bleakley and Chin's research; results for *returns to language education* show that one unit of increase in English speaking ability can increase wage rates by 39%. Investment in education may point to a significant boost in earnings, and can resemble earning patterns by age at arrival. Results show the effect of language skills on earnings show that those who can speak English *very well* can earn 33% more than whose who speak just *well*. As for the contribution of English language proficiency on income, results show that proficiency in English brings a 33% increase in incomes. Much of this effect has to do with age of individual arrival into the U.S. and also to amount of education undertaken by the subjects. In conclusion, Bleakley and chin found a positive effect on wage rates from individuals from the 1990 census in the U.S. who immigrated there as children. Bleakly and Chin state that policymakers should be aware of these factors in designing classes for immigrants.

Jeremy Sandford (2002) measured the importance of English language on the wage rates of Mexican migrants into the U.S. English language has an effect on the wage rates of Mexican migrants into the U.S. The 1990's saw a higher increase in Mexican migration than any other decade (INS 1999 in Sandford, 2002). Mexicans had one of the largest incomes among many groups, but earned much less than natives. Sandford points out that this could be due to the fact that Mexican migrants are self-segregated from the remainder of society; many lived in Hispanic-only neighborhoods in 1990 to be among those who share their culture and language. Unfortunately, many of those people also share low education and low English language skills. As such, they have less chance to escape poorer areas. Moreover, employers are not likely to open businesses in these areas, and as a result, Mexicans earn lower income.   Sandford argued that English language *deficiency*, or the lack of English language skills, could determine this wage gap difference between native English speaking males and Mexican immigrants. Sandford (2002)

hypothesized that Mexican migrants will not be able to move to higher levels because they lack communication skills, and used a sample of 81,059 adult Mexican migrants into the U.S. labor force from the 1990 U.S. Census to study the effect of English Language deficiency on incomes. The sample consisted of males 18 years of age and over who were born in Mexico and included in the U.S. Census as citizens. Sandford's study used census data in which respondents rated their own English ability as to: speaking *only English*, speaking *very well*; speaking *well; not well*; *or not at all*. Sandford wished to measure language *deficiency*, and its effects on earnings. Results showed that those with college degrees but spoke no English earned 71.5% less overall then fluent English-speaking college graduates. Even those with a high school degree and spoke some English had a deficiency rating of only 30%. Those with labor experience can benefit with an extra year of experience, and earn 2.6% more. Some results show that a college degree helps earn 72.6% more than those with less than a high school education. Results also show that only migrants with a high school diploma or some labor force experience will make less than migrants who speak English proficiently. Results also showed that migrants who *do not speak English at all* can earn half of what migrants who can speak English *very well* make. English speakers are generally better educated, and perhaps differences in human capital can explain this wage gap. English is important because English speaking firms will offer more jobs in the long run, and English speakers can interact with co-workers better, and can learn about technology in English more quickly than non-English speakers. Employers do not hire those without the dominant language of the nation because they are less useful. Similarly, the author reasons that those with English proficiency in tourism will be able to find work easier, communicate efficiently with guests, and gain income advancement more readily within tourism related business in developing countries. A suggestion by Sandford for future research is to conduct a similar study with a better, clearer measure of English language proficiency. This statement adheres to the author's goal in that the author has developed a clearer numerical English proficiency determination. The U.S. should also promote English education programs which would raise migrant earnings by increasing the return to their human capital investments.

The above studies are useful and interesting which verify the relationship between generation of employment and income through English among the labor force in Africa and America. It is difficult to apply the same research and analysis method in Cambodia, particularly due to the lack of similar data and information there. For this reason the author personally conducted three surveys within Siem Reap to collect data which otherwise was unobtainable. Data collection on site is also difficult because of the differing lifestyles, backgrounds, socioeconomic problems, and ways of answering questions during survey interviews. These are shortcomings, but through this literature review, the author wanted to show evidence that English proficiency is important in many different countries for better incomes and employment in many situations. Although there is no direct evidence in the case of Siem Reap, the author wished to emphasize that English is not only important for native English speakers, but also for migrants to developed countries and for those in developing countries as well.

3. Survey Method, Dates, Location, Sample, and Limitations

The author conducted a survey 2012 within the Siem Reap area specifically for TI employees in Siem Reap, Cambodia to examine the role of human capital attainments in English with regards to their employment situations and incomes. Siem Reap was chosen as the survey locale for its proximity to Angkor Wat, a typical cultural tourism destination. As such, it attracts visitors from around the world annually, and many of them are from inner circle countries and use native English or EIL in travel. During earlier travel experience there in the early part of 2000's, the author found that English communication was difficult for tour guides and realized that this could be vastly improved. In addition, Cambodia as a developing country has very little data on English education and its contribution to per capita income, which lends itself to more research in the future.

3.1 Method

The survey was conducted with the help of five English speaking students with

advanced English proficiency from Angkor University in Siem Reap. To conduct this research, we employed simple stratified random surveys in a face to face interview format. The sample strata were 262 TI employees in five obvious tourist industries in 2012: souvenir shops; restaurants; guest houses; hotels; and travel agencies. These businesses were chosen because they were obvious TI-related businesses. The questionnaire contained questions such as gender, living situation, marital status, years of schooling, years of English education, frequency of English speaking visitors per month, and rate of English usage per month. Although the above studies are useful and interesting, the method of acquiring English language proficiency through census data must be questioned, because using census data to determine English proficiency is not accurate from the viewpoint of actual English communicative proficiency. For this reason, to measure English proficiency, the author designed an assessment which was loosely based on the Common European Framework of References for Languages (CEFR) (Table 6). The CEFR measures English on a six level scale, is adaptable to any language (Council of Europe, 2001), and also creates more accuracy than the self-reporting levels of *only English, very well, well, not well, or not at all* offers. The author's measurement system was clearly different from that of the CEFR. The CEFR contains six easily defined levels. The author emulated this feature but adapted it to be more useful in the context of Cambodia where many people have little or no English ability. The author included assessment in level from 5 (greatest ability) to 0 (no ability) in order to assess in a quantifiable fashion, and in this way, English proficiency was easily categorized and easy to correlate and analyze numerically (Table 7). In this manner, it is a very convenient way to explain English proficiency and to tie it together with types of jobs and employment seeking.

To gather English proficiency data, each assistant was provided with a hand held IC recorder on which to record a short self-introduction by the respondents. The recordings were analyzed by linguists after the surveys to obtain an English proficiency assessment by following the criteria in Table 7.

Table 6. CEFR Reference Levels

A1	Breakthrough or beginner - can understand familiar everyday expressions, can introduce self
A2	Waystage or elementary - can understand and use expressions within immediate relevance
B1	Threshold or pre-intermediate - can understand main points and deal with traveling
B2	Vantage or intermediate - can understand and produce ideas on concrete and abstract topics
C1	Effective operational proficiency - can get implicit meaning, can use language flexibly
C2	Mastery or advanced - can understand everything, can express spontaneously and fluently

Source: Council of Europe, 2001

Table 7. The Author's English Assessment

0	No or little ability - can't communicate readily at all
1	Low Beginner - can only understand and use simple words and familiar everyday expressions
2	High Beginner - can understand and use words and expressions within everyday relevance
3	Low Intermediate - can understand many things, can produce ideas but broken with many mistakes
4	High Intermediate - can understand and produce ideas but with some mistakes and lower confidence
5	Advanced - can understand everything and produce fluently and confidently

Source: Author, 2010

3.2 Survey Dates and Location

The survey was conducted from March 23-25, 2012. The survey areas follow. Souvenir shops were located in Old Market only, restaurants were located on Pub Street and Pub Street Alley, and guesthouses were located on Street 2, Street 3, Oum Khun Street, and around Wat Bo Road. Hotels were located on National Road 6, and Angkor Wat Road. Travel and tour guide agencies were located on Oum Khun Street and Street 5, and Sivath Boulevard (see Fig.2). Fortunately, regulations are not strict in Cambodia. Permission to interview was received relatively easily beforehand or upon entering the establishment by inquiring with the business manager or owner, and the subjects were interviewed randomly. A complete questionnaire can be found in Appendix A.

Figure 2. Map of Siem Reap City
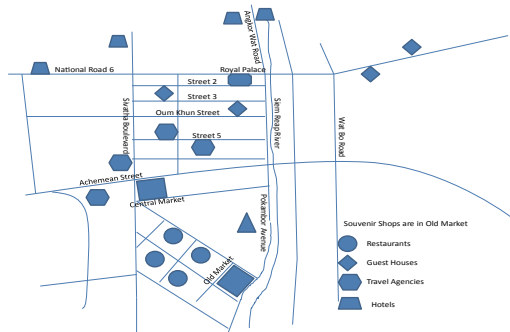
Source: Created using survey data, 2012

3.3 Sample size

The sample size was determined after obtaining preliminary data as to total number of shops in our survey bracket within Siem Reap City (Table 8). Because data on total population was impossible to find, we calculated the sample size based on the total number of shops rather than on total population. At a confidence level of 99%, and a confidence interval of 15, we calculated the sample size based on the shop total number to arrive at the sample. The total sample was 262 employees of the five TI businesses in the survey. The sample size formula can be found in Appendix B.

Table 8. Sample, 2012

Establishment	Total number of shops	Sample Size (2012)
Souvenir shops	300 (after tabulation)	60
Restaurants	120	48
Guesthouses	227 (3,000 rooms)	55
Hotels	120 (8,723 rooms)	45
Travel Agencies	142	54

Source: Department of Tourism, Siem Reap. Sample size was calculated by the author, 2012

3.4 Limitations

The lack of adequate data regarding total population in Siem Reap made sample calculation difficult. Since little exists on working population, the sample size was determined for total shop number, not on total number of interviewees. To circumvent this problem, each shop was assigned a number which was drawn blindly. From

there, only one person in each shop was randomly chosen by the interviewer or shop manager to be interviewed. Another problem was the lack of a detailed map including addresses of all the business located in Siem Reap around Old Market making it difficult to conduct pure random sampling. For this reason a map was generated by the research team for interviewing purposes. Old Market, our survey target for souvenir shops, had no data on total number of shops. To solve for this problem, the shops inside Old Market were manually counted and tabulated into a floor plan to be used in the survey procedure. The manual tabulation was difficult and time-consuming as the shops were very small and close to one another, although the floor plan assured that we obtained an adequate level of randomness. However, time and monetary constraints made achieving a large sample size difficult. Siem Reap City has data on numbers of shops, but very little initial data in other factors which could have been useful. These factors include: product prime cost, rent, electricity cost, start-up cost, etc. In addition, little data on sex and educational distribution of workers also made sample calculation difficult. Another area where data lacked was in the minimum wage income in tourism businesses in Siem Reap for comparing with our survey average wage and salary results. Designing an adequate questionnaire was challenging due to insufficient knowledge of small family businesses, sole proprietorships, labor laws, rent, costs, and other information in Cambodia. These factors caused some problems regarding the examination of the socio-economic situation of tourism businesses. Even though shortcomings existed, an adequate sample size was determined. This made it possible to obtain statistical significance. Another significant problem was that during the survey, the student assistants were hesitant to interview their fellow countrymen in English. The author encouraged and taught them interview techniques to get relevant answers from the respondents regarding all background aspects as it was an essential part of the author's research.

4. General Socio-economic Background of Siem Reap TI from the Survey

This study incorporates various tables and information with respect to different businesses in this survey. Siem Reap contains many TI businesses; however, we chose

only 5 obvious TI businesses to observe for simplification. Those businesses were: 1) souvenir shops, 2) restaurants, 3) guesthouses, 4) hotels, and 5) travel agencies. Before the analysis a classification and background explanation of the businesses will be offered. As the businesses have very different characteristics, we will also give general socio-economic information, such as gender, age, province of birth, previous jobs, job requirements, and languages spoken. Qualitative information, such as whether the employees had improved salaries, better employment prospects, and ease of finding jobs with English will also be included. A table containing general demographic information of TI businesses will be examined thereafter.

Before we begin, an income benchmark for service industry employees and a base English proficiency level for TI employees from this survey will be introduced. This will enable the reader to understand the basic differences in each business with regards to English proficiency and income. According to the Cambodia Institute of Development Study (2011), a minimum wage was only established for the garment, textile, and shoe industry, and was raised in March, 2013 from US $55 to the present value of US $80 (GMAC, 2013). Since there is no minimum wage specifically for TI, US $80 will be used as the income benchmark for this study. In addition, the base English level of TI employees was found to be 2.5 from the survey experience and this value will be used as the benchmark English proficiency level.

4.1 Classification and General Socio-economic Features of the Businesses

1) Souvenir Shops. Souvenir, meaning remembrance or memory, cater directly to the tourism market and sell traditional tourist items, which one usually buys for the associated memories. Often connected to a location, items include mass-produced things such as T-shirts, collectibles like figures, statues, and household items like coffee mugs and ashtrays. Souvenir shops in our surveys fall under this categorization, and were limited to shops only within Old Market (Fig.2). To make our survey random, we assigned a number to each shop inside Old Market after tabulation. The numbers were drawn blindly by the interviewers, and the number corresponding to the shop was approached. Often times, there was only a single

person working. In these cases, the interviewers chose this person as the interviewee; in cases where there were several employees, the first person to be approached was chosen as the interviewee. The interviewers were to verify that the employee had not been previously interviewed. The shops were close to each other, but randomness was achieved by alternating the interviewers and also by interviewing on different days. There were 60 total employees from souvenir shops in the survey. Of the total, 47 (78%) were female, and 13 (22%) were male at an average age of 27 years. Totally, 46 people (76%) were from Siem Reap, 1 (1%) from Phnom Penh, and 13 (23%) were from other other provinces such as Battambang. As for marital status, 30 (50%) were married, and 30 (50%) were also single; of those 22 employees had children and 38 did not. Of the total, 6 employees lived alone, 27 lived with their families, and 27 lived in dormitories. The survey found that employees had previous jobs such as souvenir shop employee, seller, waiter, fishing, and religious temple staff. Most had job interviews, and some job requirements for employment in souvenir shops were English ability, organization, and experience. Languages spoken by souvenir shop employees were Khmer, English, some French, a bit of Japanese, and some Thai. Total high school graduates numbered 44, or 73%, while 22 had jobs previously. The average years of schooling was 10, 56 of the total studied English in school a total of 2 years at 4 hours per week. They spent an average of US $10 per month on English study. Souvenir shop staff earned an average of US $77.38 per month, and had an average English level of 2.06. Among souvenir shop employees, 25 (73%) believed they had improved salaries and living conditions, 19 believe they had better employment prospects, and 43 of the total (71%) could find work relatively easily with English (see Table 9).

2) Restaurants. Restaurants are establishments where food is prepared and served for a fee, usually at the restaurant site. Restaurants were originally aimed at travelers, were unpretentious, and catered to public. Restaurants are usually differentiated according to the type of food. The restaurants in our surveys were located on Pub Street, Pub Street Alley (Fig. 2), and all were typical tourist restaurants there: open air, with large fans, casual, comfortable cushioned seating,

offering different types of ethnic foods. For a random survey the restaurants were each given a number which was drawn blindly. We chose to interview only a single wait staff member or front desk staff member, because these employees use English the most. The first person to be approached randomly became the interviewee after making sure that the employee was a wait staff or front desk staff and that they had not been interviewed previously. Restaurant employees in our survey totaled 48, and were 62% female (30 people) and 38% male (18 people). Restaurant employees were an average age of 24 years. Of the total, 39 (81%) were from Siem Reap, 4 (8%) were from Phnom Penh, and 5 (11%) were from other provinces, such as Battambang and Takeo. Married employees totaled 13, and single respondents totaled 35; 7 married respondents had children, and 41 did not. Of the total employees, 16 lived alone, 22 lived with families, and 10 lived in dormitories. Restaurant employees' typical previous jobs included many who had cooked before. Other jobs included cashier, service, bartender, driver, and greeter. Job requirements for those in restaurants were experience, English skill and other language skill, work experience, friendliness, and intelligence. Language skills of those in restaurants were Khmer, English, a bit of French, and some Japanese. Of the total, 14 (29%) graduated from high school, and only 5 had jobs previously. The respondents had an average of 11 years of general schooling, and an average of 2 years of English is school at 5 hours per week. Restaurant employees spent an average of US $8 per month studying English. Employees in restaurants earned, on average, US $80.50 monthly. They had an average English proficiency level of 2.39. Of the total, 20 stated they had improved salaries and living conditions, 19 believe they had better employment prospects, and 22 (46%) could find work easier with English.

3) Guesthouses. The third type of business in our survey were guesthouses. Guesthouses are often converted houses or small buildings, similar to bed and breakfasts, hostels, or inns. Categorized by inexpensive prices, and simple accommodations, they often have only a bed, a toilet, and sometimes air conditioning. They are convenient and centrally located and many have a connected restaurant

and can organize sightseeing. The guesthouses in our surveys were along Street Two, Street Three, and around Wat Bo Road, and contained anywhere from 5 to 15 rooms (Fig. 2). To obtain a random sample, within this area guesthouses were assigned numbers which were drawn blindly. The interviewers chose the first person to be seen as the interviewee; the requirements were that the interviewee must be a front desk staff member and had not been interviewed previously. The total respondents in the survey were 55 people; of those, 30 (55%) of the employees were female, 25 (45%) were male, and an average age of 25 years. Total employees from Siem Reap were 34, 3 were from Phnom Penh, and 18 were from other provinces such as Kampot Thom and Battambang. Of the total, 13 were married, and 42 were single; of the married employees, 10 had children and 45 did not. Totally, 20 employees lived alone, 22 lived with families, and 12 lived in dormitories. In the 2012 survey, previous jobs of those working in guest houses included restaurants, cook, waiter, receptionist, driver, and many with telephone experience. Job requirements for guesthouses included English and French language skill, experience, communication ability, customer service training, and the requirement that the employee must be female. Language ability for those working in guesthouses was Khmer, English, French, some Japanese, and some Chinese. Those who graduated from high school in guesthouses totaled 15, or 33%. Of the total, only 5 had previous jobs. Average years of general schooling was 13, in addition, 13 studied English in school for an average of 3 years and 5 hours per week. Respondents spent an average of US $13 per month on English study. Guesthouse employees earned an average of US $81.85 monthly, and had an average English proficiency level of 2.89. Totally, 4 people responded that they had improved salaries and living conditions, and 12 feel they had better employment prospects with English. Of the total, 16 could find work easier with English.

4) Hotels. The word hotel comes from the French word meaning host, and are fee-for-accommodation services, and are usually a higher level than guesthouses or bed and breakfasts. They vary in size, and contain a bed, bathroom, TV, and often a sofa and a mini-bar. Hotels have, since the early 2000's, increased in both number and

size in Siem Reap; the majority are now 5 star luxury hotels. These were located on
National Road Six, and Angkor Wat Road (Fig.2). Within this area, hotels were also
assigned a number which was drawn blindly. Hotels were quite serious, traditional
establishments, and many were foreign owned. Therefore it was difficult to enter and
interview without permission first. In most hotels, the managers were asked to allow
interviewing beforehand, and were also asked to choose the interviewees by random
selection. Again, only front desk staff were interviewed; no restaurant staff, cleaners,
or bell-boys were included in the interviews. There were 45 respondents in total
for this survey, and they were 25 years of age on average. In the survey, more hotel
employees were male than female, a definite change from the previous 3 businesses,
where there were more female employees. From this we can determined that gender
plays a role in some TI jobs in Siem Reap. This could be because hotels have more
barriers and it is more difficult for women to obtain employment. The total employees
in the survey was 45 people. Of the total, 28 (62%) were male, and 17 (38%) were
female; 29 were from Siem Reap, 2 were from Phnom Penh, and 14 were from other
provinces such as Kandal, Kampot, and Sihanoukville. Totally, 14 respondents were
married, and 31 were single; 6 employees had children, and 39 did not. In hotels, 17
lived alone, 19 lived with families, and 9 lived in dormitories. Previous jobs for hotel
employees consisted of other hotels, receptionists, security businesses, and other
service businesses. Requirements for those working in hotels were an English-only
interview, experience, English ability, communication ability, a small general aptitude
test, test of skill, English language certificate, and a driver's license. Language ability
for those employees in hotels was Khmer, English, French, some Japanese, and some
Chinese. In hotels, 27 (60%) employees graduated from high school, and 23 (51%)
had previous jobs. Employees had 12 years average of general schooling, and 34 of
those studied English in school for an average of 3 years and 7 hours per week. Hotel
staff spent an average of US $14 per month on English study. Hotel staff earned an
average monthly income of US $115.73. Employees in hotels had an average English
proficiency level of 3.45. Of the total, 19 (42%) employees had improved salaries and
living conditions, 19 of them feel they had better employment prospects, and 33 (73%)

could find work easier with English.

5) Travel Agencies. Travel agencies provide services for travelers for a fee. Services include airline tickets, car rentals, railway tickets and reservations, and package tours. Travel agencies also provide reservations for tour guides in a particular area, and often provided travel and tour combinations to create a holiday with connection to airlines or other tour transportation. They arranged busses, sightseeing, and other activities, often in some kind of combination including: trekking, kayaking, and tours around culture tourist destinations. This is the type of travel agencies in our three surveys: combination agencies geared towards offering package holidays to tourists in SR and were located on Street 5, Achemean Street, and Sivath Boulevard. Like hotels, travel agencies contain more male than female employees perhaps for the same reason. For a random sample within travel agencies, within the survey area the travel agencies were assigned numbers which were drawn blindly. Usually travel agencies were small and had only several employees. The interviewers chose the first person to come in contact with as the interviewee after making sure they had not been interviewed earlier. The respondents from travel agencies totaled 54; of those 31 (57%) were male and 23 (43%) were female. Travel agency employees were on average 26 years of age. In travel agencies, 33 were from Siem Reap, 6 were from Phnom Penh, and 15 were from provinces including Battambang, Bantey Mancheay, and Kampong Thom. Totally, 17 were married and 37 were single; 9 had children and 45 did not. Of the total, 20 lived alone, 18 lived with families, and 16 lived in dormitories. Previous employment for those in travel agencies included driver, airline company, receptionist, taxi company, hotel, organizer, bank employee, English teacher, tour coordinator, cashier, and front desk clerk. Job requirements for travel agency jobs were English communication skill, computer skill, English speech at a fast pace, and intensive English skill. Languages spoken at travel agencies were Khmer, English, French, Japanese, Korean, Chinese, some Thai, and some Vietnamese. In travel agencies, 17 or 30% graduated from high school. As for previous jobs, only 17 had jobs previously, and had 14 years average of general schooling. As for those who studied

English, 20 or 36 % studied English in school at an average of 3 years and 11 hours per week. Employees spent an average of US $12 per month on English study. On average, travel agency employees earned an average of US $157.68 monthly. The employees of travel agencies had an average English proficiency level of 3.31. Of the total, 17 people had improved salaries and living conditions, 11 or 20% feel they had better employment prospects, and 18 (32%) stated they could find work easier with English ability.

Table 9. Socio-economic Features of TI Businesses of SR, 2012

Business	Souvenir	Restaurant	Guesthouse	Hotel	Travel Agency
Total Sample Particulars	60	48	55	45	54
Those who graduated from high school	44	14	15	27	17
Those with previous jobs	22	11	5	23	17
Those with improved salaries and living conditions	25	20	4	19	12
Average years of general schooling (min:6, max:16)	10	11	13	12	14
Number who studied English in school	56	30	13	34	20
Average years of English schooling (min:0, max:8)	2	2	3	3	3
Average hours of English study per week (min:0, max:24)	4	5	5	7	11
Average US $ monthly expenditure for English study (min:0, max:180)	US $10	US $7	US $13	US $14	US $12
Those with better income/employment prospects with English	20	19	12	19	11
Those who could find work easier with English	43	22	16	33	18

Source: Compiled using survey data, 2012

4.2 General TI Demographics

This sub-section contains TI demographics found in the 2012 survey. The data will be presented in a general fashion here. Table 10 shows that most of the tourist industry labor force were in their twenties. This means that there is good potential to develop job skills through English from this point. Many older members of society were executed during the Pol Pot regime, and therefore there were fewer at age 40 and over, creating a skewed population. For this reason, TI is substantially important for youth culture in Cambodia. The total number of respondents was 262. The majority (73%) was in their 20's in all businesses, and 8% were between 10 and 19 years of age. Only a few (16%) were in their 30's, and very few (3%) were over 40 years of age. This shows that the TI industry attracts a young, vibrant labor force, who eager to work with travelers. Unfortunately, many TI employees use their jobs as a stepping-stone to higher paying jobs in different careers such as banking, so many TI jobs are not taken seriously. However, TI provides necessary employment opportunities, especially for females. Souvenir shop, restaurant, and guesthouse employees (a total of 163) had a majority (65%) of female employees, illustrating that females have possibilities for jobs in TI. In hotels and travel agencies (99 respondents) the majority (59%) was male. Most employees were from Siem Reap Province (69%), although a few migrated to SR from other provinces such as Banteay Mancheay, Battambang, and Takeo (25% total). More employees were single, but many were married, and a few had children. As for living arrangements, 42% of the total lived with their immediate family (fathers, mothers, and siblings), and 30% lived alone. The remainder lived in school or work dormitories.

Table 10. General Demographics of Tourism Labor Force Under Study, Siem Reap, 2012 (number)

Item		Souvenir Shops	Restaurants	Guesthouse	Hotels	Travel Agencies
Age	10-19	8	5	4	1	2
	20-29	31	41	41	40	39
	30-39	16	2	8	4	12
	40 +	5	0	2	0	1
	Total	*60*	*48*	*55*	*45*	*54*
Sex	Male	13	18	25	28	31
	Female	47	30	30	17	23
	Total	*60*	*48*	*55*	*45*	*54*
Province	Siem Reap	46	39	34	29	33
	Phnom Penh	1	4	3	2	6
	Other	13	5	18	14	15
	Total	*60*	*48*	*55*	*45*	*54*
Marital	Married	30	13	13	14	17
	Single	30	35	42	31	37
	Total	*60*	*48*	*55*	*45*	*54*
Children	Yes	22	7	10	6	9
	No	38	41	45	39	45
	Total	*60*	*48*	*55*	*45*	*54*
Living	Alone	6	16	20	17	20
	W/Family	27	22	22	19	18
	Dormitory	27	10	12	9	16
	Other	0	0	0	0	0
	Total	*60*	*48*	*55*	*45*	*54*

Source: Compiled using survey data, 2012

In the findings 77% of respondents stated that native English or EIL speakers visited their places of business every day (Fig. 3), while 14 % stated that they were visited 3 days per week, and 9% had native or EIL visitors once per month. This is important because employees had great exposure to native and EIL speakers daily, and therefore needed English. In addition, as employees work and communicate more with EIL speakers, their English will improve naturally. In statistical analysis, and sometimes real life, it is not possible to examine the full extent to which factors influence other factors, but we know there is a relationship between English proficiency and education, employment, and income.

Figure 3. Frequency of English Speaker Visits, TI Labor Force, 2012
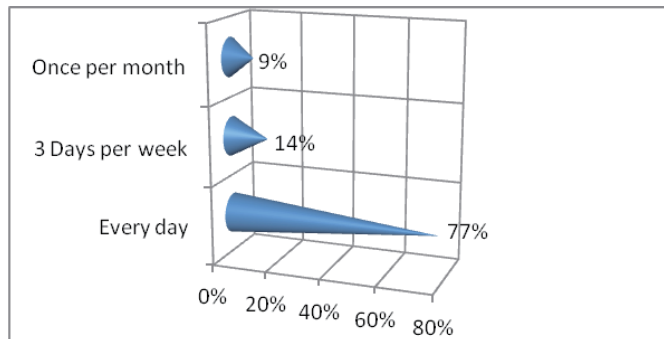
Source: Compiled using survey data, 2012

5. Method of Analysis

In order for the reader to understand the results, the analysis method will first be explained. To statisically examine the interaction of English on income, 9 variables of socio-economic significance were calculated with 8 statistical measures. Those variables are: income, previous salary, English proficiency level, total years of schooling, amount of money spent on learning English monthly, hours of English education per week, years of English education, total working years, and English usage in days per month. Before we begin the analysis, the layout of the tables will be explained, and the variables and their abbreviations will be defined. In each table vertically on the left we find the variables used in calculations. The measures used in calculations are displayed along the top of each table. Values are rounded off to 2 decimal places for specificity. Variable definitions are as follows: *Income* is monthly salary in US dollars; *prev sal* denotes monthly salary in previous employment also in US dollars; and *Eng lvl* refers to English proficiency level after post interview analysis. *Ttl scho yrs* is the abbreviation for total years of education, *Eng $/mo* is the abbreviation for monthly English expenditure in US dollars, and *hrs/Eng* refers to the number of hours of English learned in school per week. *Yrs Eng edu* is the abbreviation for total years of English education in school, and *wkng yrs* refers to years of employment at the present job. Finally, *Eng/days* is the abbreviation for number of days English is

used per month. As for the measures, *mean* is the central line of data or average, *median* is the exact central point of the data, and *mode* is the value which appears most often. *Variance* shows dispersion in the values, *standard deviation*, abbreviated as *SD*, exemplifies how far the values are spread out from the mean, and *coefficient of variation (CV)*, or the ratio of the *standard deviation* to the *mean*, is useful because values with differing units such as income and education can be compared. Table 11 contains a breakdown of variables used in statistical analysis.

Covariance indicates much about variables' relationships with one another; two variables moving in a positive direction show a positive relationship among variables. However, movement in opposite directions shows no relationship. For *covariance* in this analysis, different variables from the statistical tables were chosen to obtain a more thorough understanding of socio-economic aspects. Specific variables related to English proficiency, English education, and English usage per month were used to examine interactions with income. Table 12 encapsulates the variables and references used in *covariance* tables.

In addition to the above, a Pearson's R *correlation* test was also performed to show validity. The test correlated *income* with the slightly different variables from the covariance table, to gain more insight. *Correlation* coefficients range between -1 and +1; those closer to +1 are significant, and those closer to -1 are less significant. Table 13 outlines the variables and references used for the *correlation* test.

Table 11. Variables for Statistical Analysis

Variables	Reference
Income	Monthly sal ($US)
Prev sal	Salary in previous job
Eng lvl	English proficiency levels
Ttl scho yrs	Total years of general education
Eng$/mo	Expenditure for English study per month
Hrs Eng/wk	Hours of English study in school per week
Yrs Eng edu	Total years of English education in school
Wkng yrs	Years working at the job
Eng/days	Days per month English is used

Source: Derived from survey data, 2012

Table 12. Variables for Covariance

Variables	Reference
Income	Monthly salary ($US)
Eng lvl	English proficiency level
Ttl scho yrs	Total years of general education
Eng$/mo	Expenditure for English study per month
Hrs Eng/wk	Hours of English study in school per week
Eng/days	Days per month English is used
Job hrs	Working hours per week

Source: Derived from survey data, 2012

Table 13. Variables for Correlation

Variables	Reference
Income	Monthly salary ($US)
Eng lvl	English proficiency level
Ttl scho yrs	Total years of general education
Yrs Eng edu	Total years of English education in school
Hrs Eng/wk	Hours of English study in school per week
Eng$/mo	Expenditure for English study per month
Eng/days	Days per month English is used

Source: Derived from survey data, 2012

5.1 Statistical Results of Five Businesses in SR TI

As can be noted in the following tables, *mean* values for income in all the businesses showed a clear ascending order from lowest income (souvenir shops) to highest (travel agencies). However, this data definitely contains outliers which cause skewness. To rectify this skew, *median* and *mode* were used as better central indicators. *Median* values also showed a similar order of salaries: souvenir shops a *median* of US $70, restaurants and guest houses a *median* of US $80, hotels a *median* of US $110, and travel agencies a *median* of US $150. *Median* values generally resembled the *mean* values. *Mode* values were in a somewhat similar order: souvenir shops, US $100; restaurants, US $70; guesthouses, US $80; hotels, US $100; and travel agencies, US $150. Because of this, it is most likely that the order of income found in mean values is true, and remains constant throughout the population. In other words, souvenir shop income will always be lowest, and travel agencies will be highest. However, there are reasons for this. It was the author's hypothesis that more total years of general education, more years of studying English, more hours of English in school, higher English proficiency level, and a larger amount of money spent on learning English would lead to higher salaries. After analysis this hypothesis appears to hold

true. Although we cannot prove causation, there is obviously a relationship between more human capital attainments in education and salaries, and this means there is no doubt that contributions to human capital in English can have beneficial effects. As Mincer (1974) has found, more years of schooling leads to higher incomes. This agrees with our findings, as outlined in Mincer's schooling model.[3] However, this idea is difficult to transfer to Cambodia because educational data in developing countries is difficult or next to impossible to find, many students enter school but don't graduate, many students do not even enter school, and many go to haphazardly built and administered schools with no records. However, in this survey we were able to gather much information on the actual income, English level, years of education, and hours of English study to help understand TI more thoroughly. This survey helped to realize a more definite structure and an income distribution to the businesses in Siem Reap.

Table 14. Statistical Results of Souvenir Shops, 2012

	Mean	Median	Mode	Variance	SD	CV
Income (US$)	77.38	70	100	877.73	29.62	0.38
Prev sal (23 ppl.) (US$)	86.34	70	40	4256.32	65.24	0.75
Eng lvl	2.06	2	2	1.18	1.08	0.52
Ttl scho yrs	9.88	9	9	8.85	2.97	0.30
Eng $/mo (US$)	9.40	2	0	627.83	25.05	2.66
Hrs/Eng	3.15	2	1	10.52	3.24	1.02
Yrs Eng edu	1.77	1	1	3.23	1.79	1.01
Wkng yrs	3.68	3	1	9.49	3.08	0.83
Eng/days	24.21	30	30	109.69	10.47	0.43
Total Sample: 60 people						

Source: Caculated using survey data, 2012

In souvenir shops (Table 14), the *income mean* value was lowest at US $77.38, and was below the benchmark of US $80. *Median income* was US $100 and *mode* of US $40, with quite a high *variance* and high *SD* and *CV* values as well. This indicates that there was much discrepency between salaries at souvenir shops, and therefore less standardization. In fact, many souvenir shops were informal businesses. The *mean* value *for prev sal* was US $86.34, higher than present but only 23 people had jobs before. *Median* values for *prev sal* was US $70 and *mode* values were US $40.

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3)   See *Schooling, Experience, and Earnings*, Jacob Mincer, Columbia University Press (1974).

This shows that a few employees made US $70, but most made around US $40. The *variance in prev sal* was extremely high at 4256.32, indicating an inconsistent work situation in the respondents' past, which is quite common in souvenir shops. Souvenir shops are relatively easy to start, and require little start-up capital, so many employees quit and start their own souvenir shop and therefore move around a great deal. Those who did have previous jobs, however, are receiving higher salaries now. The *mean* value for *Eng lvl* was the lowest at a level of 2.06 (high beginning level), and the *median* and *mode* are 2, again below the benchmark value of 2.5. Causation is difficult to prove; however, as we will see in the following tables, income rates generally corresponded to English proficiency levels, again strengthening Becker's human capital theory that a hidden aspect influences higher income. This hidden aspect must be human capital investments in more years and hours of English education and higher English self study, as the author maintains. The value for *ttl scho yrs* had a low *mean* of 9.8 years. *Median*, and *mode* values were low as well at 9 years; many souvenir shop staff had only a secondary school education. Very few employees attended high school and most did not graduate, possibly affecting their employment possibilities. *Eng$/mo* showed that souvenir shop staff spent around US $9 per month studying English, but the *variance*, *SD*, and *CV* values were high, which was indicative of the large number of ways in which souvenir shop employees study English. Some employees studied very little and spent little money, while others spent a great deal of money on self-study. Values for *hrs Eng edu* were: *mean*, 3; *median*, 2; and *mode*, 1, all of which indicate that souvenir shop staff studied English around 3 hours per week. As for *yrs Eng edu*, souvenir shop staff studied English for roughly 1 year, as based on the statistical table. *Wkng yrs* value for souvenir shops staff was 3.68, which is actually quite long. The Souvenir shop staff used English an average of 24 days per month. Employees in souvenir shops could go and begin their own shops. However, in order to continue working and to obtain repeat customers, shop staff had an English proficiency level of 2, spent up to US $9 per month studying English, had 3 hours per week, and 2 years of English study in school. In addition, they used English around 24 days per month. In a hospitality business such as this, customers

will be able to receive friendly service, and therefore visit the store again. *Income* and *Eng lvl* values were quite far below the benchmarks. This indicates low *Eng lvl* values correspond with low *income* values.

Table 15. Statistical Results of Restaurants, 2012

	Mean	Median	Mode	Variance	SD	CV
Income (US$)	80.50	80	70	674.55	25.97	0.32
Prev sal (18 ppl.) (US$)	82.22	70	70	1409.47	37.54	0.45
Eng lvl	2.39	2	2	0.88	0.93	0.39
Ttl scho yrs	10.97	12	12	6.57	2.56	0.23
Eng $/mo (US$)	6.93	5	0	82.61	9.08	1.31
Hrs/Eng	3.41	3	1	7.31	2.70	0.79
Yrs Eng edu	2.14	2	1	1.47	1.21	0.56
Wkng yrs	2.45	2	2	3.16	1.77	0.72
Eng/days	23.60	30	30	109.73	10.47	0.44
Total Sample: 48 people						

Source: Caculated using survey data, 2012

Mean values for *income* in restaurants (Table 15) were US $80.50 and were just at the benchmark at US $80. As for *income* order, restaurants ranked as second from lowest. *Prev* sal value is low, as in souvenir shops, and show *median* and *mode* values of US $70, illustrating that of 48 sample, 18 had previous jobs and most made US $70, but some made as low as US $30 per month. *Prev sal* also had a large *variance* at 1409.47. This is indicative of the previous work situation where many people had varying jobs and many had no jobs. Similar to the *income* value, restaurant employees had the second from lowest *Eng lvl* as well at 2.4, or high beginner level. Again, this is below the benchmark value of 2.5. In addition, there was little *variance* and small *SD* in *Eng lvl*. Small *variance* and low SD levels signify that there was more cluster around the central line of data, and therefore more similarity in the variable. *Ttl scho yrs* had a mean of 11, with a *median* of 12 and a *mode* of 12. We understand this to mean that restaurant employees had at least around 11 years of total schooling, and shows many people at least went to high school, and many graduated which was important for obtaining employment. Restaurant staff spent around US $7 per month on studying English, less than souvenir shops, indicating they may be somewhat satisfied in their work situation. The *variance* in *Eng$/mo* was lower than souvenir shops and this may

indicate that the money spent on studying English was more consistent. *Hrs/Eng* shows that restaurant staff spent almost 3 1/2 hours per week studying English in school, and around 2 years studying English in school. These values were higher than souvenir shops and indicate that as one spends more time studying English in school and on one's own, one may be able to receive higher salaries. The *mean* value for *wkg yrs* was 2.45, less than souvenir shops. Although there was high *variance* and *SD* in *income*, *prev sal*, and *Eng/days*, there was very low *variance*, *SD* and *CV* in *Eng lvl*, and somewhat low values in *yrs Eng edu*. This in turn means that the connection between job stability and English education was more consistent in restaurants. Those who are satisfied to have similar incomes to one another may be content to stay in restaurant jobs. *CV* in *income* and *Eng lvl* had quite similar values in both souvenir shops and restaurants, an indication that employees used English often at an average of 24 days per month like souvenir shops, but perhaps only for rudimentary communiation such as taking orders or giving prices. Employees in restaurants had an *Eng lvl* of 2.4, 11 years of ttl *scho yrs*, and spent around US $7 on English study, with 3 1/2 hours and 2 years of English study in school. In addition, staff used English at least 23 days per month which is crucial for improved customer service. As in souvenir shops, the benchmark values for *income* was also below the benchmark values for *Eng lvl*. Low *Eng lvl* values could indicate fewer years and hours studying English, therefore the *Eng lvl* remains low and does not positively affect *income*.

Table 16. Statistical Results of Guesthouses, 2012

	Mean	Median	Mode	Variance	SD	CV
Income (US$)	81.85	80	80	1438.41	37.92	0.46
Prev sal (20 ppl.) (US$)	74.03	60	50	1757.36	41.92	0.56
Eng lvl	2.89	3	2	1.09	1.04	0.36
Ttl scho yrs	12.98	12	3	7.24	2.69	0.20
Eng $ / mo (US$)	15.23	6	0	856.33	29.26	1.92
Hrs/Eng	5.87	6	6	17.44	4.17	0.71
Yrs Eng edu	3.24	3	3	4.46	2.11	0.65
Wkng yrs	2.38	1	1	13.35	3.65	1.53
Eng/days	25.47	30	30	79.84	8.93	0.35
Total Sample: 55 people						

Source: Caculated using survey data, 2012

As for guesthouses (Table 16), similar trends in values resulted; high *variance* and *SD* in *income*, *prev sal*, *Eng$/mo*, and *Eng/days*, a fact similar to souvenir shops and restaurants. This held true for all businesses in fact, as in tables for hotels (Table 17) and travel agencies (Table 18). Here, *mean* income was third from the lowest at US $81.85. In guesthouses the *income* value began to rise above the benchmark. *Income median* was US $60 and the *mode* was US $50. *Mean for prev* sal was US $41 for 20 people of the total 55 in the survey; *median* value was US $60 and *mode*, US $50. These values showed the mean being quite low, and that most people made around US $50 per month. This exemplifies that guesthouse employees had dramatic income uplifts after obtaining their jobs. If we examine *Eng lvl*, we see that it was third from lowest as well at 2.89, around low intermediate, but above the benchmark as well. This level was higher than both souvenir shops and restaurants. *CV* values were less similar in guest houses, but *Eng/days* and *Eng lvl CV* values were quite similar and could indicate guest house employees had a higher *Eng lvl* because they communicated with guests on many different levels, and assumed many different roles such as front desk clerk, concierge, waiter, and bartender all in one. Of course, these roles required much English usage. This is turn always makes their employment prospects higher as they become more viable employees due to better English. As we will see in the correlation table later, there was a positive correlation between *income* and *Eng$/mo* (money spent on studying English per month) in guesthouses. To generate employment in guesthouses, staff had a higher level of English at around 3 (low intermediate). They were high school graduates as they had an averge of 13 years of general schooling, which assisted them in getting jobs. Employees spent US $15 per month on English study, and had almost 6 hours per week during 3 years of English study. In addition, employees were able to use English around 25 days per month with customers and guests. In guesthouses, *income* and *Eng lvl* both rose above the benchmark values, indicating the positive effect of *Eng lvl* on *income*. In guesthouses it is evident that almost 13 *ttl scho yrs*, 3 *yrs Eng edu*, and 6 *hrs/Eng* have on *Eng lvl*, which appears to push the *income* value over the benchmark.

Table 17. Statistical Results of Hotels, 2012

	Mean	Median	Mode	Variance	SD	CV
Income (US$)	115.73	110	120	1538.97	39.22	0.33
Prev sal (17 ppl.) (US$)	85.94	70	60	1683.80	41.03	0.47
Eng lvl	3.45	4	4	1.13	1.06	0.30
Ttl scho yrs	13.62	12	16	6.74	2.59	0.19
Eng $/mo (US$)	11.15	10	10	115.13	10.73	0.96
Hrs/Eng	3.97	4.5	6	6.25	2.50	0.62
Yrs Eng edu	3.26	3	2	3.54	1.88	0.57
Wkng yrs	1.84	1.5	1	1.71	1.30	0.70
Eng/days	28.55	30	30	31.70	5.63	0.19
Total Sample: 45 people						

Source: Caculated using survey data, 2012

We expected hotel employees (Table 17) to have the highest income, although this was not the case. In actuality, travel agencies had the highest income. Hotel staff *mean income* value was US $115.73, and had a *median* of US $110 and a *mode* of US $120, quite far above the benchmark. In actuality, hotel employee *income* was probably close to the *mean* value, but *variance* was high in *income* as were *SD* and *CV* values. *Prev sal* values were lower in *median*, US $70 and *mode*, US $60. *Variance* was high in both *income* and *prev sal* as it was in the guesthouses, restaurants, and souvenir shops, again showing differing past and present working situation in hotels. This situation is quite common in businesses in developing countries. In fact, in Cambodia there is no real TI minimum wage nor standardized salary. Hotels had the highest *mean* values in *Eng lvl* at 3.45 (low intermediate), indicating hotel employees communicate with foreign guests daily, and must be able to handle problems clearly and professionally through their English communication. The *median Eng lvl* was 4 (high intermediate), as was the *mode*. *Eng lvl* value was also quite high above the benchmark, and the highest among the businesses. This indicates that many employees were capable of quite in-depth, high intermediate level of communication. Employees also studied English in school, and all employees graduated from high school; as the *mode* value shows, some employees even graduated from or were attending university at the time of the interview. This is supported by the fact that the value for *ttl scho yrs* is highest in Table 17 at almost 14 years of schooling. Education is extremely important for obtaining jobs in hotels. As for *Eng$/mo*, hotel employees spent third from lowest per

month studying English (US $11.15) and this shows in English ability which help staff get better incomes. The value for *hrs/Eng* was around 4, indicating 4 hours per week of English study in school, and spent just over 3 years learning English in school. To get jobs in hotels, young staff were high school graduates, many went to university, and many had several years of English education. *Wkng yrs* value was actually lowest of the 5 businesses in hotels, indicating that employees spent the least time in their jobs, probably because of the world's economic problems. Hotel employees used English the most as found in the value for *Eng/days*, at 28 days per month which shows they had to use English practically all the time during work. As can be verified in the previous three business tables, that as values in *Eng lvl*, *ttl yrs scho*, *Eng $/mo*, and *yrs Eng edu* increase, *income* values also increase, indicating returns to both investments in schooling, and invesments in English human capital. As we can see in these results, investments in human capital for English education were returned in higher incomes, better employment situations, and higher standards of living. The standards of hotels are higher than other businesses. Hotel employees were all high school graduates and some attended college. Also, the majority spent over US $11 per month studying English, and had 4 hours and 3 years of English study to get better hotel jobs. Employees used English around 28 days per month and this was useful for excellent communication skills and customer service which always guarantees repeat customers as well. In hotels an important connection can be made between *income* and *Eng lvl*. High *Eng lvl* values above the benchmark appear to positively affect income in hotel employees. As we will see in the correlation results (Table 20), more education is also quite highly correlated with high *income* levels in hotels.

Table 18. Statistical Results of Travel Agencies, 2012

	Mean	Median	Mode	Variance	SD	CV
Income (US$)	157.68	150	150	3017.65	54.93	0.34
Prev sal (27 ppl.) (US$)	114.44	90	60	5608.83	74.88	0.65
Eng lvl	3.31	3	4	1.08	1.04	0.31
Ttl scho yrs	13.01	12	12	8.13	2.85	0.21
Eng $/mo (US$)	11.29	8.5	20	102.43	10.12	0.89
Hrs/Eng	4.64	5	6	6.11	2.47	0.53
Yrs Eng edu	3.68	3	3	9.70	3.11	0.84
Wkng yrs	2.27	2	1	4.32	2.07	0.91
Eng/days	25.72	30	30	31.0	8.82	0.34
Total Sample: 54 people						

Source: Caculated using survey data, 2012

Travel agencies (Table 18) had the highest *income* value at US $157.68, well above the benchmark value. This is because they are the most trained in English communication. We know this because they had the most years of English education in addition to the most hours of English education in school. Employees must communicate with overseas travel companies often, and must have higher knowledge of computers for booking flights, hotels, and for communicating with foreign guests regularly. *Prev sal* was around US $114, with a median value at US $90 and mode at US $60, and the *variance* and *SD* in *prev sal* were high, again indicating much variance and extremely different past working situations. *Eng lvl* ranked fourth at 3.31, or low intermediate level; this was also above the benchmark. *Mode* for *Eng lvl* was 4, so we know that some employees had high intermediate English levels. *Ttl scho yrs* was also ranked fourth from lowest at 13 years. From this we know that travel agency staff at least graduated from high school, and many were studying in university at the time of the interview. *Eng$/mo* was US $11, similar to what hotel staff spent, but less than guesthouses. From this data, it seems that hotel and travel agency staff still spent money on studying English each month even though they have better salaries. The *hrs Eng edu* value was almost 5 hours per week of English study in school, higher than hotels, but again, lower than guesthouses. The *yrs Eng edu* value was almost 4 years of English in school, which the longest of the 5 businesses. This is again indicative of higher returns to English human capital. These results show that travel agencies offered a high salary and the staff had long years of working at over 2 1/4 years,

showing job stability. However, travel agencies also required long years of English education. In addition, travel agency staff used English almost 26 days per month, as found in the *Eng/days* value. The travel agency business is not standardized as of this time. As a result, the statistical result for *income* shows a very high *variance. SD* in *income* and *prev sal* were also quite high, and this indicates quite a different socio-economic situation in each person. This is understandable due to the unstandardized nature of the travel agency situation. Travel agencies staff had an English level of 3.3, or intermediate. Being a high school graduate and either in university or a graduate is paramount to receiving better salaries and jobs in most industries. Total years of education, as well as years of English education and high English proficiency are extremely important to obtain jobs in travel agencies. Spending an average of US $11 per month studying English is important, as is having almost 5 hours and 4 years of English study in school. Employees of travel agencies used English at least 25 days per month to obtain excellent and professional communication with customers and overseas travel agencies. In travel agencies, both *Eng lvl* and *income* were high above the benchmark values, indicating a positive influence of *Eng lvl* on *income.*

5.2 Covariance Results

After analysis, there are some interesting outcomes in the covariance results. For example, *income* and *Eng lvl* is positive in restaurants, guesthouses, hotels, and travel agencies (Table 19). *Income* and *ttl scho yrs* was positive in all businesses, indicating the importance of education in all businesses, a fact which cannot be denied. It was the highest level in hotels, which reflects the statistical tables and also the correlation test. Hotels had the highest value of *income* and *Eng lvl* as well. This showed that a high *Eng lvl* corresponded to higher *income*. *Income* with *Eng$/mo* shows an especially positive level in guesthouses and the level in restaurants was quite high as well, indicating that these employees spent money studying English and this benefitted them by offering them more stable employment. *Income* with *hrs/Eng* had a positive connection, and was highest in hotels. This makes sense as hotel employees responded that they must be high school graduates. *Income* and *Eng/days* was positive

in hotels and travel agencies. This exemplified the fact that both hotel and travel agency employees needed to English in a professional, proper fashion for their jobs which was returned to them in the form of higher incomes. Finally, *income* and *job/ hrs* was mostly positive, but quite highly so in travel agencies. This of course showed that travel agency employees worked long and sometimes difficult hours which was returned to them in more financial remuneration.

Table 19. Covariance Results, TI Labor Force, 2012.

Type of Business	Variable					
	Inc - Eng lvl	Inc - Ttl scho yrs	Inc -Eng$/mo	Inc - Hrs/Eng	Inc - Eng/days	Inc - Job hrs
Souvenir	-5.74	3.64	-126.40	-24.12	-100.166	-138.76
Restaurants	6.65	6.44	69.76	0.35	-28.98	96.54
Guesthouses	11.62	2.97	127.28	-11.90	-51.20	14.08
Hotels	16.18	34.81	-20.29	11.16	22.72	24.02
Travel Agencies	6.65	4.76	20.77	-4.77	39.35	140.38

Source: Calculated using survey data, 2012

5.3 Correlation Results

We also performed a Pearson's r correlation test to show validity (Table 20). In the correlation table, the variables were English proficiency, total years of schooling, years of English education, hours of English education, monthly expenditure for studying English, and English usage in days per month. These were included in order to examine the relationship of *income* with schooling and English more closely. Values for *income* and *Eng lvl* were the highest in hotels, and this solidifies our notion that employees in hotels needed professional English on daily basis. Hotel employees must communicate on a broad and sometimes intense level, and the income reflects this. *Income* and *Eng lvl* was next highest in guesthouses; this had to do with the friendly and service-oriented nature of guesthouses. In fact, guesthouses showed a positive value for *income* and *yrs Eng edu* study as well. This was interesting because guesthouse employees spent the most on studying English per month of any business,

a strong indication that guesthouse employees wanted to better themselves by getting more education perhaps to move to higher paying positions. Values for restaurants were quite positive *income* with *Eng lvl* and *income* with *Eng$/mo*, showing that restaurant employees used English a great deal in their jobs naturally, and may have also wished to obtain higher paying jobs. Results in travel agencies were the most surprising. We expected there to be higher values in *income* and *Eng lvl*, but the values were positive nonetheless. The value for *income* and *Eng$/mo* value was quite high, showing that travel agency employees studied outside of work and that positively affected *income*. Values in the correlation of *income* with *ttl scho yrs* in all businesses were positive, illustrating the importance of years of schooling to income. Interestinglsy, the highest correlation values for *ttl scho yrs* were in hotels followed by travel agencies. This verifies that one important aspect for obtaining jobs in hotels and travel agencies with higher salaries is not only the employees' English levels, but also the employees' total years of education. This fact also corresponds to Mincer's empirical findings which show positive returns to investments in education human capital.

Table 20. Correlation Results, TI Labor Force, 2012

Type of Business	Variable					
	Inc - Eng Lvl	Inc - Ttl scho yrs	Inc - Yrs Eng edu	Inc - Hrs/ Eng	Inc - Eng$/ mo	Inc - Eng/days
Souvenir	-0.18	0.04	-0.13	-0.24	-0.17	-0.32
Restaurants	0.27	0.10	-0.06	0.01	0.30	-0.10
Guesthouses	0.29	0.03	0.25	-0.07	0.11	0.26
Hotels	0.39	0.35	0.15	0.11	-0.05	0.10
Travel Agencies	0.11	0.31	-0.03	-0.04	0.38	0.08

Source: Calculated using survey data, 2012

6. Discussion and Future Implications

This section extends the discussion of research findings to examine future implications of our analysis. In this section, we view how employees can earn higher incomes by moving towards better paying jobs with more investments in English education, whether it be in a school setting or by the employees themselves. We

first examine income distribution to see which business has the highest mean income levels. This is done to explore the character of each business and what kind of background each business contains so future employees can hone their skills for getting better jobs. We then examine generating employment factors to show that income levels rise with English proficiency and to show what is necessary goals employees need to attain to reach higher better employment in higher paying jobs.

6.1. Income Distribution

We found through survey analysis that there was a definite distribution order to the businesses in our survey. Using *mean* and *median income* values, this distribution in ascending order was as follows: 1) souvenir shops, with a *mean* of US $77 and a *median* of US $70; 2) restaurants, with a *mean* of US $80 and a *median* of US $80; 3) guesthouses, with a *mean* of US $81 and a *median* of US $80; 4) hotels, with a *mean* of US $115 and a *median* of US $110; and 5) travel agencies, with a *mean* of US $157 and a *median* of US $150. The income differential between souvenir shops (the lowest income earners in our survey), and travel agenices (the highest income earners in our survey) was US $80. In other words, using *mean* values calculated from our survey, travel agency staff earned 51% more per month than souvenir shop staff. In addition, souvenir shop staff earned 35% more *income* per month than garment industry workers who made around US $55 per month as a mimimum wage in 2012; travel agency employees made three times what garment industry employees earned per month. Minimum and maximum income *mean* values naturally have outlier problems. This is why *median* values were used in calculations as well. However, the central line of data is worthy of calculation and the author tried to obtain the truest values for this purpose. The reason for the unequal income differential in our data could have stemmed from the nature of the business situation, but also was based on differing educational background, age, and gender. Most employees in the survey were between ages 20 and 29, and the majority was female. Usually in a normal distribution, younger people and females earn less incomes. Howeever, the TI in SR is providing employment and incomes above the benchmark for those with English levels

above the benchmark as well. Those who had longer total years of education, total years of English education, and hours of English education in school, and also had an expenditure to learn English monthly, and higher English proficiency levels. These aspects are all directly related to income, and potentially future employees are in a position to earn higher incomes and receive better jobs. Indirectly related to income was *frequency of English speaker* visits to the shop as customers. In this case, as the employees becomes better at English, English speakers visit more often and spend money to buy items. This spending is returned to the staff in higher salaries. Another aspect that is indirectly related to income is English usage in days per month. In this case, the staff uses English often and become adept English speakers. The better English speakers then attract would-be customers to their shops, and spending is also returned as higher salaries to the staff.

6.2. Generating Employment with English

We found during the survey experience, that many people owe a higher standard of living to the TI in SR. Without the TI, many people would not have jobs, and with English ability more people can get jobs than ever before. Those without English ability are disadvantaged due to the fact that Angkor Wat is a well-known World Heritage Site, and attracts visitors from every country. English proficiency can help generate employment situations and higher incomes for those working in TI, especially around World Heritage sites like Angkor Wat. Fig. 4 shows income values charted against English proficiency levels. As English proficiency levels rise on the X axis, income levels also generally rise. Here, it is evident that employees increase their English proficiency levels, their income rises, a fact which reflects the statisical tables above.   While Fig. 4 was created using mean values, it still remains incontrovertible evidence that *Eng lvl* was positively related to income in TI businesses in SR in this survey. As mentioned earlier, the benchmark *income* was US $80, and the benchmark *Eng lvl* was 2.5.   As can be clearly seen in Fig. 4, those with *Eng lvl* above the benchmark had *income* levels which are also above the benchmark. It is evident that those who wish to move on to higher paying positions must remain in

school, must study English, and must raise their English proficiency levels in order to obtain better jobs.

Fig. 4. Income with English Level, SR TI, 2012*
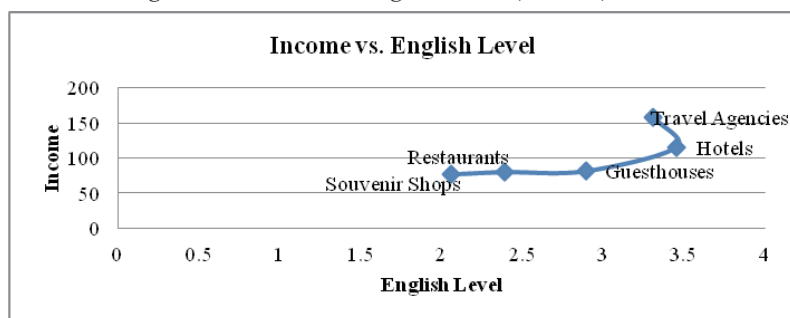
Source: Derived from survey data, 2012
*This chart was created using mean values

Due to our positive statistical results, we can confidently put forth the assumption made during survey experience that English ability is crucial to finding jobs and obtaining higher incomes in the developing country of Cambodia. Fig. 4 shows that income is dependent upon upon factors directly related to income, such as English proficiency level, years of English education, hours of English education, and amount of money spent on studying English; as well as to factors indirectly related to income: frequency of English speaking visitors and English usage per month. Souvenir shops have the lowest *mean Eng lvl* and the lowest *mean income*. Restaurants have second highest *Eng lvl* in order, and guesthouses slightly higher than restaurants, rank third. Hotels have highest *Eng lvl*, but do not have the highest salaries as travel agency employees do. We can account for this difference being hotels have better income systems and more standardization than travel agencies, and they require higher English proficiency levels. We know now that as English level increases, income increases as well. It is obvious that those who study English in school and by themselves have the potential to have their investments in English education and proficiency returned to them in higher incomes. Table 21 shows income attainments those with level 5 and level 1 English proficiency.

Table 21. Income Attainments of Advanced and Beginning English Proficiency Levels

English Level	Yrs. Eng. Edu. (mean)	Yrs. Eng. Edu. (median)	Hrs. Eng. Edu. (mean)	Hrs. Eng. Edu. (median)	Eng $/ mo (US$) (mean)	Eng $/ mo (US$) (median)	Income (mean) (US$)	Income (median) (US$)
5 (Advanced)	3.87	4	4.68	5.5	10.62	10	141.87	127.50
1 (Low Beginner)	1.38	1	1.72	1	2.80	0	85.88	80.00

Source: Calculated using survey data, 2012

It is evident in Table 21 that those with an English level of 5 (advanced) can earn more income than those with a level of 1 (beginning) with human capital attainments in English education and ability. Those with level 5 English level totaled 20, containing 9 males and 11 females, and were an average age of 28. They studied English 2 1/2 years more in school than those with a level of 1. Level 1 English speakers totaled 35 (12 males and 23 females), and were an average age of 26. This shows that more females have level 5 English ability, and level 5 ability were slightly older. The data also show more females with level 1 ability because there are more females in the strata. This is a large indication that TI offers many employment and income possibilities for females and younger employees. In addition, those with a level 5 English ability also studied English 3 more hours per week in school than those with level 1, and spent US $7.82 (73%) more on studying English themselves per month than those with an English level of 1, and therefore, larger investments influence larger incomes. Clearly, all the factors point towards the fact that English education and proficiency is of paramount importance to obtaining higher paying jobs in TI. It is obvious from results that those with an English level of 5 have more opportunities to receive higher paying jobs with more stability, although this does not come without hard work and perseverance. We can say that the numeric English proficiency level, number of years of English education, number of hours of English education, and the amount of money spent on studying English monthly all are directly related to incomes and employment in Siem Reap TI. Other factors, such as English usage per month and frequency of English speaker visits are more indirectly related to

income, but are still valuable activities. Again, this shows that English education and proficiency are both directly and indirectly related to income in the 5 businesses. This can help young employees receive higher incomes and stable employment in the TI of SR.

In the data under study, 78 total employees, or 70% of the total TI employees in SR had previous jobs (Table 22) within the previous 2 years. Of those who had jobs before, the TI labor force has seen a 50% increase in incomes from salaries previously. In fact, as table 25 shows, most employees had large increases of income in 2012 over previous salaries, and hotels had the biggest increase at 72%. This is evidence that the TI situation has returned to normal after the economic problems of the world, and therefore, is able to offer more employment and higher salaries. Hand in hand with higher incomes is generally higher English proficiency as seen in Fig. 4. The author posits that this is no accident; higher English proficiency and background leads to higher incomes, especially in TI in developing countries.

Table 22. Percent of Change from 2 Years Previous Salary, 2012

Previous employment	2 Years Previous Salary (US$) (mean)	Present Salary (US$) (mean)	Percent of Change
Souvenir	33	77	+57%
Restaurants	30	80	+62%
Guest Houses	41	81	+49%
Hotel	32	115	+72%
Travel	57	157	+63%

Source: Calculated using survey data, 2012

7. Conclusion

In conclusion, through this research it is evident that larger returns to investments in English education and proficiency can be earned in the TI in SR than in agriculture, garment, or manufacturing professions. Hours and years of English study in school, in addition to money spent on learning English monthly, and developing English proficiency are paramount to receiving better jobs, and are directly related to income. Even those elements indirectly related to income, such as frequency

of English speaking customers and usage of English per month, are beneficial to the young labor force as it enters the TI job market. Though this survey was the second completed, it can be treated as a pioneer study as none like it has been done in the past. Although the sample size was small, the survey conditions were imperfect, and the data collection situation was difficult, the research team was able to gather some interesting and useful information from the tourist industry situation in Siem Reap. In addition to designing questionnaires and collecting socio-economic data, the author has made several inroads into the discovery of English education's impacts on income and employment generation in a developing country. The survey experience led to more understanding of the socio-economic situation and how to foster income and employment growth in a typical cultural tourist destination in a developing country. As we have seen in the above analysis and discussion, the methods of classifying English proficiency have until now been unclear and difficult to quantify. The author has made a contribution by developing a new language proficiency assessment for clear, numeric measurements, which have allowed the research team to exactly and minutely measure English proficiency, and to correlate it and compare it statistically to other numeric variables such as income, years of English education, years of general education. More research into the field needs to be done, but, the author had some significant findings:

1) The income levels in the 5 businesses have a definite ascending distribution order: (1) souvenir shops; (2) restaurants; (3) guest houses; (4) hotels; and (5) travel agencies,

2) Statistical results tell us there is a positive relationship between income and English level in our businesses, and although it cannot be said that English ability alone achieved higher incomes, it is clear that a combination of English proficiency, English education, the amount of money spent on English education assisted in achieving better incomes,

3) A positive connection between income and years of general education is also evident,

4) Although we cannot show causation, we do know that there is a positive

relationship between hours of English education, years of English education, usage of English per month, and income,

5) Young labor force can have better employment situations if they study English in school, spend money to learn English on their own, achieve an intermediate level of English proficiency, and

6) Employment can also be generated by graduating from high school and attending at least some university.

It can be said, therefore, that those with English abilities may have better overall employment experiences which include ease of finding jobs, ease of keeping the job, better lifestyles, and conditions overall, better sense of community contribution, better sense of their own employment. In a developing country, the money spent on one's own English education and better overall learned skills can result in higher paying jobs in TI. Due to the fact that monetary investments are difficult to measure in developing countries, a better paying job with slightly higher salary is perhaps akin to the returns to human capital investment as seen in six figure salaries, such as a corporate CEO in developed countries. The author would like to make an illustration now. As found through this survey experience, a typical employee in Cambodia's garment industry makes the minimum wage of US $80 per month, which was recently raised in March, 2013 from US $55 (GMAC, 2013). However, according to our research (2012), if the same person spends 3 years learning English in school for 5 hours a week and spends US $5 per month studying English on one's own, he or she has more chance to receive a job in a travel agency for example making US $157 per month, almost double the salary of garment jobs.

From this survey situation, we were able to verify some factors of general and English background education, the socio-economic situation, income, family life, and living conditions of those working in tourism in a developing country. Our goal was to correlate income with English proficiency and with other variables to examine how to create better income and employment situations in its role in employment, which we have made a first attempt at doing, and gathered some interesting data. Only after other researchers examine the connection between English proficiency

and employment will we be able to know the true impact of language proficiency and communication to the lives of those in developing countries.

8. Further Research

In order to examine the socio-economic impact of English education and profiency in TI, several other TI in developing countries should be surveyed and analyzed in a similar fashion, and larger samples should be taken, which the author plans to do. Before doing so, a carefully planned questionnaire should be prepared to gather background social, education, and English information. In this way, several countries can be compared and contrasted to completely see the effect of English education and proficiency on income employment opportunities in a broader area. In addition, to fully and accurately measure English proficiency, TI researchers should administer a broad, low cost English proficiency examination at one location. This would enable researchers to see first hand what problems in communication exist, and what can be done to alleviate these problems quickly. To this end, more TI programs in English specific to tourism should be designed and offered. Afterwards, the results of program participants should be analyzed as to the effectiveness of the particular programs. This would enable young TI labor force the chance to obtain useful practice and to get a "foot in the door" in actual TI businesses through such things as internships which the program could initiate.

Through this survey, we have been able to gain important insight into the TI situation in the developing country of Cambodia. There are many more things to accomplish in survey work examining the question of the influence of human capital attainments in English education. Through this preliminary pioneering survey work, we have begun to take more steps towards finding ways of offering better employment and income opportunities through English, especially for those in developing countries.

Appendix A.

Questionnaire, Siem Reap Tourist Industry, March 2012

Type of Shop _____   Survey Number _____

  1. 0. F   i. M   Age _____

  2. Marital status   i. married   ii. single   iii. divorced

  3. Children   0. no   i. yes (How many? _____)

  4. Living   i. alone   ii. with parents   iii. with husband/wife/children

  5. Province   i. Siem Reap   ii. Phnom Penh   iii. other _____

  6. Highest educational level   i. primary   ii. secondary   ii. high school

    iv. university

  7. Years of English study in school _____ years. Hours of English study per week _____.

  8. Languages learned in school _____

  9. Languages spoken   i. Khmer only   Khmer and: ii. Englishiii. Japanese

    iv. French   v. Chinese   vi. Thai   vii. other _____

10. Length of time at this job _____ years   _____months

11. Previous job? 0. no   i. yes (What? _____)

12. Previous salary $_____ per month   week (circle)

13. Hours per week of work at job now   ____hours per week

14. Requirements for this job (list all) _____

15. Why tourism job? _____

16. Biggest use of English at job: i. can only help with simple questions

    ii. can give more information   iii. can explain in more detail

    iv. can explain things and understand about 75%

    v. can understand 100% and explain in detail fully

17. Frequency of English speaker visits: i. always (every day)   ii. often (3 days per week)

    iii. sometimes (once per month)   iv. rarely (once per year) v. never

18. Did your English ability help you find this job? i. yes ii. no   iii. not sure

19. Has your salary, living conditions improved since you have this job?

    i. yes   ii. no   iii. not sure

20. Your salary: $_____ per   month

21. Money spent per month on rent, toiletries, etc. $ _____ per month

22. Money spent on studying English per month $ _____per month

English proficiency. (Interviewer: start recording, then say the questionnaire number from the top.)

Please introduce yourself in English following the questions below.

1. What is your name?

2. How old are you?

3. Where do you live?

4. How many people are in your family?

5. How long have you been working at this job?

6. Why did you choose a tourism job?

7. What do you have to do at your job?

8. Do many English speaking tourists visit your business?

9. Did you need to have good English to get your job?

Appendix B.

Sample Size Calculation

$$n \geq \frac{N}{\left(\dfrac{e}{k}\right)^2 \dfrac{N-1}{P(1-P)} + 1}$$

n = sample size

N = size of population

e = tolerance error（5%, 0.05）

k = confidence coefficient（confidence interval 95%, 1.96）

p = expected percent of respondents which are expected to respond affirmatively

      The confidence coefficient, k corresponds to the degree of confidence we hope to obtain after results are tabulated. 95% confidence is the most widely accepted and used for this paper. P = the number of respondents expected to respond affirmatively. As this study was only geared towards collecting data only for hospitality businesses, it was only relevant to collect data for those businesses. Unfortunately, the total number of souvenir shops (in Siem Reap) was unavailable, and the author could only make an attempt at counting the souvenir shops in a single area, but by no means could count city/area-wide due to time and budget constraints. The relatively small sample size could ensure that our results are unbiased and accurate.

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雇用と所得拡大における人的資本の役割－語学力の視点から
（カンボジア、シアムリアップ州の観光産業を事例に）

モロー ジェフリー

要　　約

　開発経済学の歴史を振り返ると、1950-1960 年代の経済学者たちは、国民所得の向上が最大の開発であると認識していた。1970 年代後半からは、工業化及び都市化が経済発展であると考えられるようになり、1990 年代以降は、開発における人的資本の役割が注目を浴びるようになった。開発経済学の中でも、雇用と所得拡大における人的資本の役割が比較的新しい分野であり、政府や政策立案者、経済学者たちにとって最も重要で難しい課題の１つとなっている。雇用と所得拡大に関する先行研究は数多く存在しており、理論的・実験的な様々な研究が行われている。しかしながら、語学力（英語力）の視点から見る人的資本の育成や雇用と所得拡大に与える影響に関する研究は未だに少ない。

　本稿では、世界遺産であるアンコール遺跡群の観光拠点となっているカンボジアのシアムリアップ市で現地調査を行い、英語力が雇用と所得拡大に与える影響について考察を行う。まず、第１節では、研究の背景として、カンボジアにおける観光産業の現状について述べる。第２節では、先行研究を紹介し、第３節では、調査方法、調査地域の概要、調査の限界等について説明する。第４節では、観光産業に従事する人々の社会的・経済的背景について述べ、第５節では、アンケート調査のデータを分析する。第６節では、調査結果、第７節では、本稿の結論を述べる。最後の、第８節では、今後の研究課題と展望について述べる。